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Finding a New Center: A study of Neo-Industrial America

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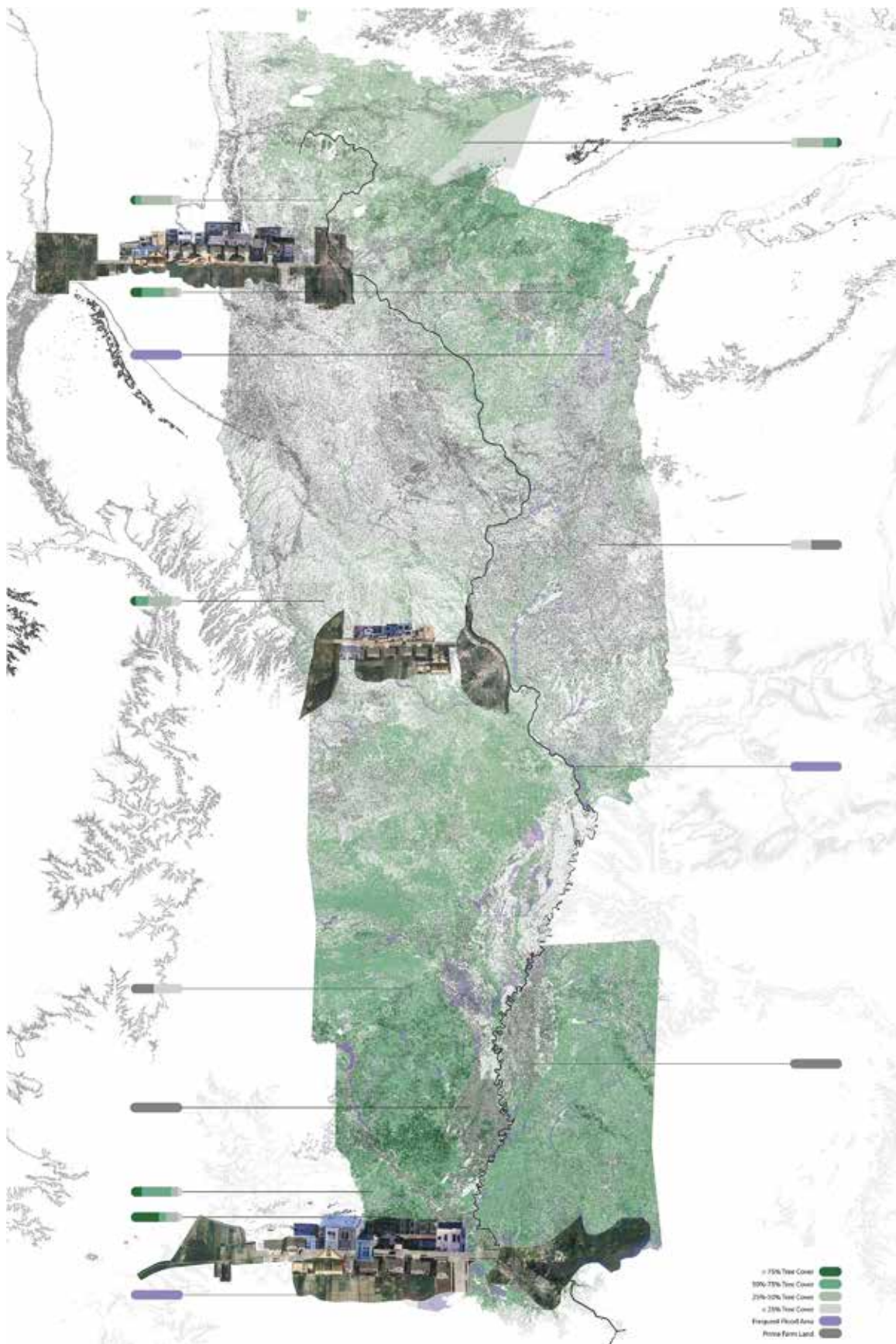
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F i n d i n g a N e w C e n t e r

A study of Neo-Industrial America

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Thesis Publication

Finding a New Center: A Study of Neo-Industrial America

Globalization moved manufacturing in America overseas, leaving the middle of the country with forgotten industrial zones.

As a result, the edges of the country, with greater access to international markets, have flourished, creating a distinct divide between the middle and the edge. Moving out of the post-industrial era into the current age of the neo-industrial, revitalization of the middle can occur by reintroducing industry utilizing previous skill sets needed for agriculture and manufacturing. We are arguing that the center of the United States can be made relevant again through the programmatic revitalization of post-industrial sites. The Mississippi River is historically one of America's biggest connective systems, spanning the entire height of the country from Mexico to Canada. Post-industrial era cities along the Mississippi River, such as Minneapolis, St. Louis, and New Orleans, have suffered from economic decline, unemployment spikes, population decreases, and a lack of production that continues today. By introducing a new industrial program, the middle of the country can be revitalized. Cannabis, both hemp and marijuana, is a growing industry that primarily exists on the edges of the country; stimulating economies, creating tax revenue, and decreasing unemployment. St. Louis, located in the middle of the river system, has high potential for revitalization, both on a local scale, due to high levels of layoffs and relocation of industrial headquarters, as well as on the larger scale of the territory. The intervention that we are creating in St. Louis is representative of what could occur along the whole river. Our proposed intervention of the cannabis industry will create a large scale impact, not only through agriculture but also through branching into retail, food services, and medical research. Because cannabis can bolster many subsequent industries, we are proposing a multifaceted complex that can be inserted into the existing urban fabric. The site along the Mississippi will act as an urban hub that connects to the suburban and rural sites.

Introduction

The Center of the United States can be Made Relevant Again Through Programmatic Revitalization of Post-industrial Sites

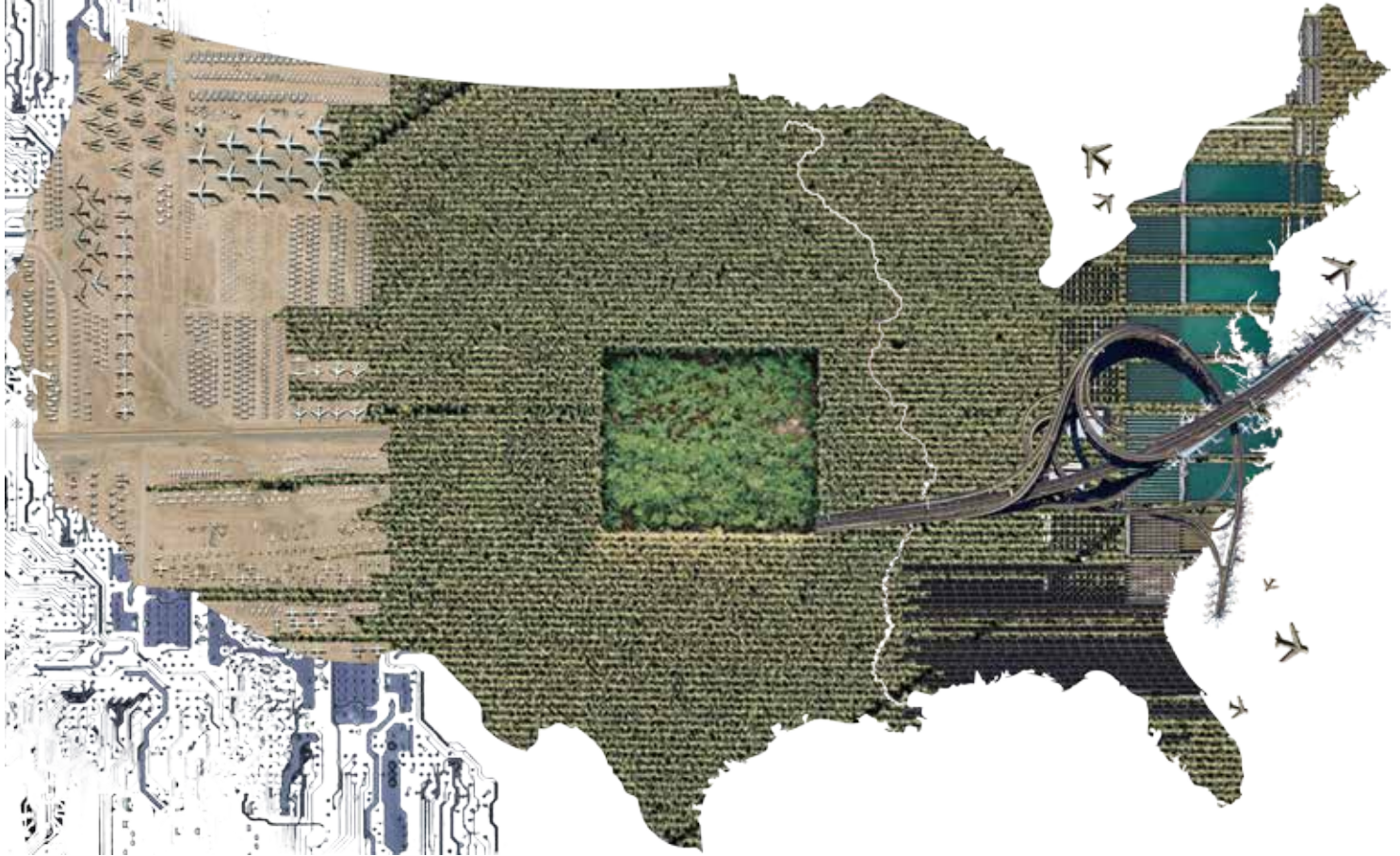


Figure 1. Globalization Collage

Globalization moved manufacturing in America overseas, leaving the middle of the country with forgotten industrial zones. As a result of globalization, the edges of the country, with greater access to international markets, have flourished, creating a distinct divide between the middle and the edge. Moving out of the post-industrial era into the current age of the neo-industrial, revitalization can occur by reintroducing industry utilizing previous skill sets needed for agriculture and manufacturing. **We are arguing that the center of the United States can be made relevant again through the programmatic revitalization of post-industrial sites.**

The Mississippi River is historically one of America's biggest connective systems, spanning the entire height of the country from Mexico to Canada. The cities that line the river were manufacturing and agricultural hubs, tied into a greater system through the river. By looking at Minneapolis, St. Louis, and New Orleans, which housed three of the main industries along the river (flour, freight, and hydroelectricity) we were able to emblematically study the larger system and how it operates in the post-industrial era, and can transition to the neo-industrial. In the post-industrial

era these cities have suffered from economic decline, unemployment spikes, population decreases, and a lack of production that continues today. St. Louis, located in the middle of the river system, has high potential for revitalization, both on a local scale as well as the larger scale of the territory. The intervention that we are creating in St. Louis is representative of what could occur along the whole river.

Revitalizing the forgotten industrial spaces with a new mode of production will give these areas an opportunity for economic expansion that would make the middle of the country relevant once again. Cannabis, both hemp and marijuana, is a growing industry that primarily exists on the edges of the country; stimulating economies, creating tax revenue, and decreasing unemployment. On the industrial scale, hemp can be used for textiles, food production, and biofuels. By using this as a rotating crop within the existing agricultural infrastructure, along with corn and soybeans, this can greatly reduce soil degradation, which is common in the Midwest due to industrial farming. Marijuana is a smaller scale industry, but has the opportunity to become larger through medical research grants from universities and pharmaceutical

companies.

Hemp is grown in typical agricultural field conditions that exist in rural areas, whereas marijuana is grown in greenhouses, which can occur in any area. With our abandoned post-industrial site along the Mississippi River acting as the hub, the marijuana greenhouses located in abandoned suburban plots, and the hemp production in nearby rural fields, we can bridge the gap between typologies.

The absence of industry that was once so prevalent and embedded in the social aspects of the community, left a void that caused a lack of hope and security that perforated into all aspects of life. Our proposed intervention of this new industry will create a large scale impact, not only through agriculture but also through branching into retail, food services, and medical research.

Because cannabis can bolster many subsequent industries, we are proposing a multifaceted complex that can be inserted into the existing urban fabric. The site along the Mississippi will act as an urban hub that connects to the suburban and rural sites.

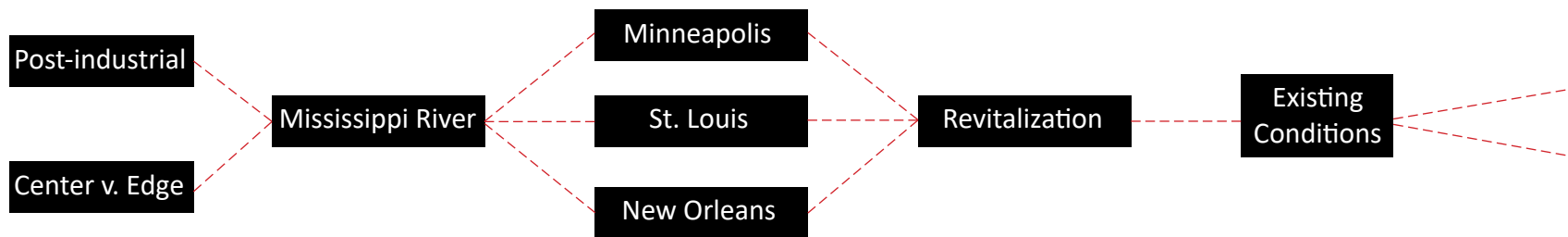




Figure 2. Thought Diagram

PROJECT	LOCATION	ORIGINAL USE	CURRENT USE	SUMMARY
Sands Casino	Bethlehem, PA	Steel Factory	Casino/Resort	Ruin Porn
San Francisco Ferry Building	San Francisco, CA	Ferry Port	Market	Disney-fication
Hamburg Science Center	Hamburg, Germany	Empty Site	Center for Science	Connective Port
Zeitz Museum of Contemporary Arts	Cape Town, South Africa	Grain Silo Complex	Museum	Mono-program
The Highline	New York, NY	Central Railway	Elevated Linear Park	Disney-fication
Empire Stores	Brooklyn, NY	Civil War Storage Warehouse	Mixed-use	Synthesize & Preserve

Figure 3. Precedent Matrix

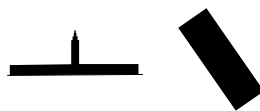
We mapped out our intentions and thought process starting with our main concepts of post-industrial and the center vs. the edges with our claim that the center of the country has been left behind because of globalization. This resulted in our selection of the Mississippi River territory as a system and the affects that globalization had on it. From there we selected three key cities: Minneapolis, St. Louis, and New Orleans. We chose these cities because they have various major industries from the industrial time including grain production, transportation systems, and energy production. We are claiming that these cities can be revitalized programatically using existing conditions from the previous industries like agriculture and manufacturing. The program selected to revitalize is cannabis, which will help to economically stimulate the region at both a local and national scale.

We created a catalog of precedents of attempted reuse. In studying these projects we found that most were not successful at revitalizing their sites. Instead they simply inserted an unrelated program or caricaturized the former industrial zone. This resulted in a sense of nostalgia, but not effective renewal. We looked at them programatically, contextually, and aesthetically, evaluating based on their regard/disregard of heritage. The Empire Stores and the Hamburg Science Center were classified as the most successful of the studies. Empire Stores was successful in its regard of previous program, however the aesthetics still hinted at nostalgia. The Hamburg Science Center by OMA was the most successful because of it's consideration of the heritage of the site at a large scale with its history of connectivity. It also reflected heritage at the building scale with the shipping container module.

Following our study of reuse projects we began to analyze post-industrial zones across the United States and created a matrix to organize the selected sites. The unifying factor between all of the selected is that they're all along a body of water because we are interested in the overarching connective system that this creates. We selected examples from all contexts (urban, rural, suburban), building typologies, and industry types to understand the full spectrum of industry in America.



The Sands Casino in Bethlehem, PA was a steel mill that has since been converted into a casino. This creates a caricature of the steel mill in a completely disney like manner, only having elements that give the sense of its industrial past, but overemphasized aesthetics (the giant sign).



The Ferry Building in San Francisco, CA was a hub for ferry transportation along the bay and fell into disrepair after the Golden Gate and Bay Bridges were completed. Automotive access became the major mode of transportation into the city. After years of being empty, a farmers market was inserted into the existing space, completely devoid of any relationship to the past.

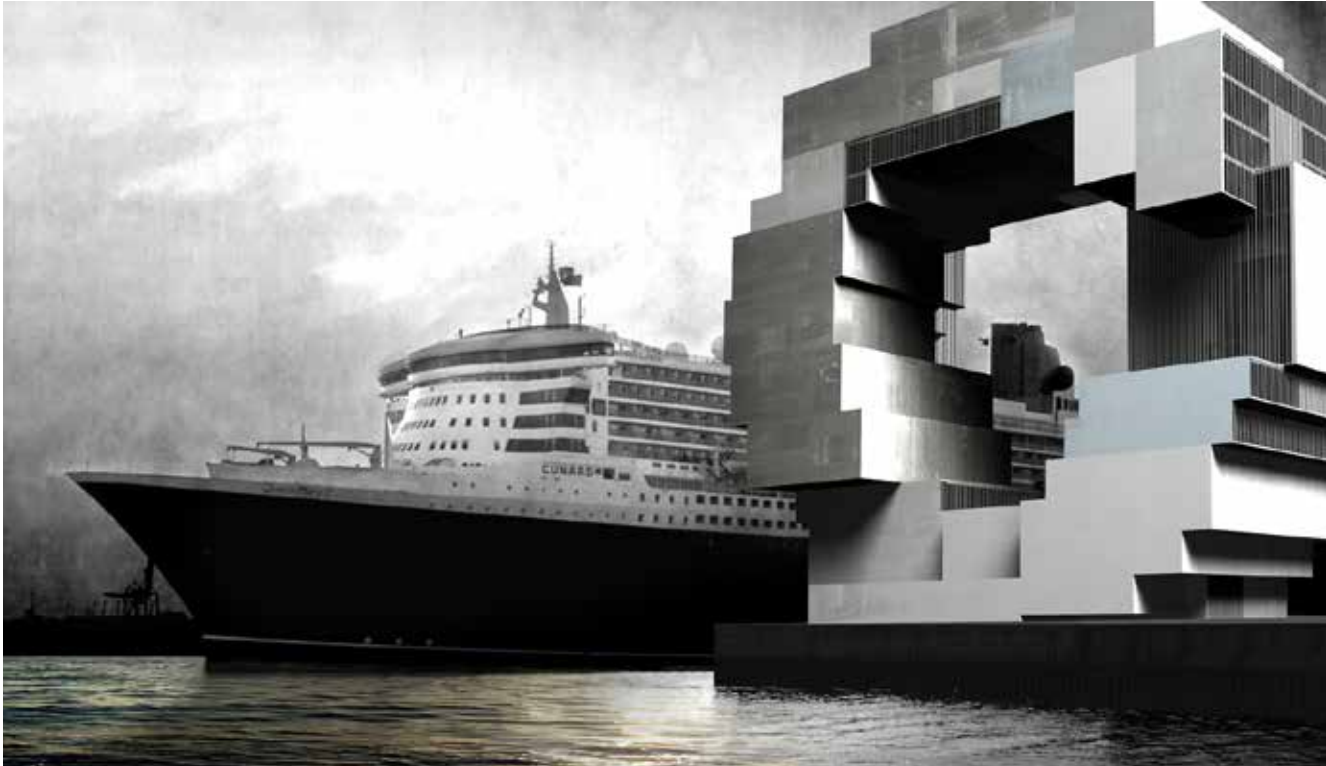


The Highline is a modern example of ruin porn turned mainstream tourist trap. The former connectivity that this track system had is now reduced to the instagrammable.



The Zeitz Museum of Contemporary Art of Africa (MOCAA) is a former grain silo that now hosts gallery spaces for contemporary art. This insertion doesn't relate to the heritage of the site and reduces its richness by making it a mono-programmed space.

Figure 7. The Zeita Museum of Contemporary Art of Africa
Zeitz Museum of Contemporary Art Africa, Thomas Heatherwick, Cape Town, South Africa, 2017

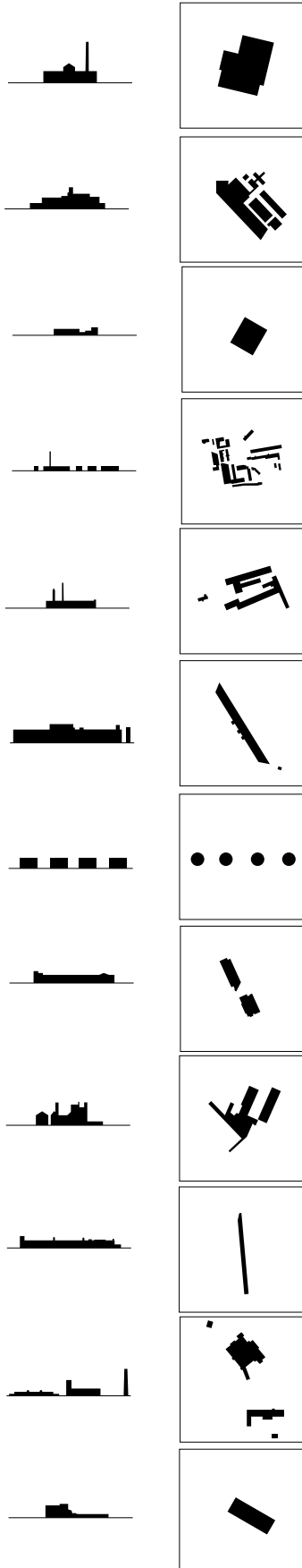


OMA's Hamburg Science Center in Germany sits on the industrial port and creates a connection between multiple parts of the city and acknowledges the port's innovative heritage.



Empire Store creates a makerspace in a former industrial zone, keeping the former nature of the site alive, but rejuvenated for the modern maker.

Figure 9. Empire Stores
Empire Store, Studio V, New York City, NY, 2013



CITY	CONTEXT	WATER TYPE
NEW ORLEANS, LA	Urban	Mississippi
SEATTLE, WA	Urban	Duwamish Waterway
MEMPHIS, TN	Urban	Mississippi
BIDDEFORD, ME	Suburban	Saco River
KINGS MILLS, OH	Rural	Little Miami River
BUFFALO, NY	Urban	Buffalo River
TEXAS CITY, TX	Suburban	Galveston Bay
DETROIT, MI	Urban	Detroit River
PITTSBURGH, PA	Urban	Monongahela River
ST. LOUIS, MO	Urban	Mississippi
HOLYOKE, MA	Suburban	Conn. River
MINNEAPOLIS, MI	Urban	Mississippi

INDUSTRY	REGION	COMPANY	ABANDONED?
Power Plant	South	Market St Power Plant	Yes
Flour	Pacific Northwest	Fisher Mill	Yes
Tires/Blacksmith	South	Firestone	Yes
Textiles	Northeast	Mixed Use	Partially
Ammunition	Midwest	Peters Cartridge Co.	Yes
Grain Silos	Northeast	American Malting Co.	Partially
Oil/Gas Refinery	Southeast	Valero Marathon	No
Automobiles	Midwest	Ford Motor Co.	No
Steel	Midwest	Carrie Furnace	Yes
Freight	South	Unknown	Yes
Paper	Northeast	Unknown	Yes
Flour Mill	Midwest	Gold Metal Flour	Yes

Figure 10. Post-industrial Cities Matrix

The Mississippi River

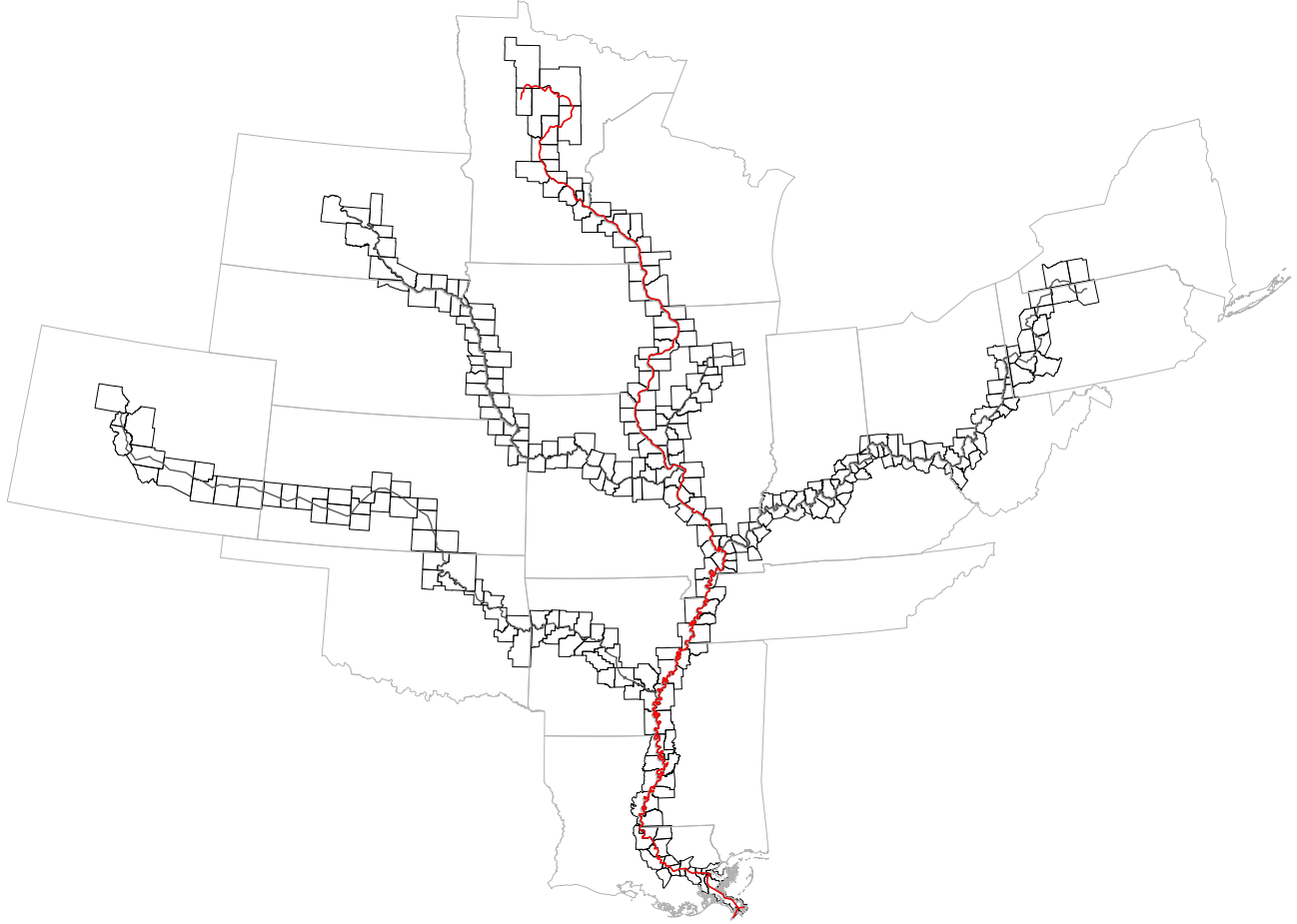


Figure 11. Mississippi River and Tributaries

After studying many post-industrial cities across America, we selected the Mississippi River as our territory of investigation. We are particularly interested in the Mississippi River because of its prominence during the industrial era and the connective system that it creates.

This river was once one of the most trafficked waterways in the US and was essential in the spread of industry and western expansion. With access to the plains region of the country, America was able to produce massive amounts of grains and other agricultural products and transport them with ease. Goods were transported on down bound and up-bound routes connecting the United States as a whole as well as all of North America. With the construction of the Erie Canal, its relevance grew even further. However, with advances in technology in regards to infrastructure, the need for the waterway diminished. These new infrastructures included railroads, highways, and planes.

The physical river has gone through many course changes throughout history. These have been dictated by flooding and expansion of its tributaries.

Throughout our research we studied the maps of Harold Fisk which tracked the path of the physical river from 1700 - 1944 compared to the current path of the river. Upon studying this course change it became evident why the major cities are positioned in the places they are along the river, many on higher land to protect against flooding. The major floods that have occurred throughout history have been detrimental to the cities, causing displacement of people, major infrastructure damage, and an overall negative impact on their economies.

In our argument of the center vs. the edge, we are defining the center as the Mississippi River and the edges as any territory that has access to global expansion. In the industrial era, the center, and the Mississippi River in particular, was a booming industrial hub. Through globalization, the traffic of industry that existed in the center moved overseas, leaving the center abandoned. Their economies directly relied on manufacturing and agriculture. With the United States now outsourcing for much cheaper prices, the cities along the Mississippi have not been able to recover economically. As business left, layoffs increased and economic stability decreased.

Looking at three major hubs along the Mississippi, Minneapolis, St. Louis, and New Orleans, we were able to compare their economic paths and how they were shaped by the river. We chose these cities because they had the main industries along the river (flour, freight, and hydroelectricity) so we were able to emblematically study the larger system and how it operates in the post-industrial era, and can transition to the neo-industrial. In the post-industrial era these cities have suffered from economic decline, unemployment spikes, population decreases, and a lack of production that continues today. St. Louis, located in the middle of the river system, has high potential for revitalization, both on a local scale as well as the larger scale of the territory. The intervention that we are creating in St. Louis is representative of what could occur along the whole river.

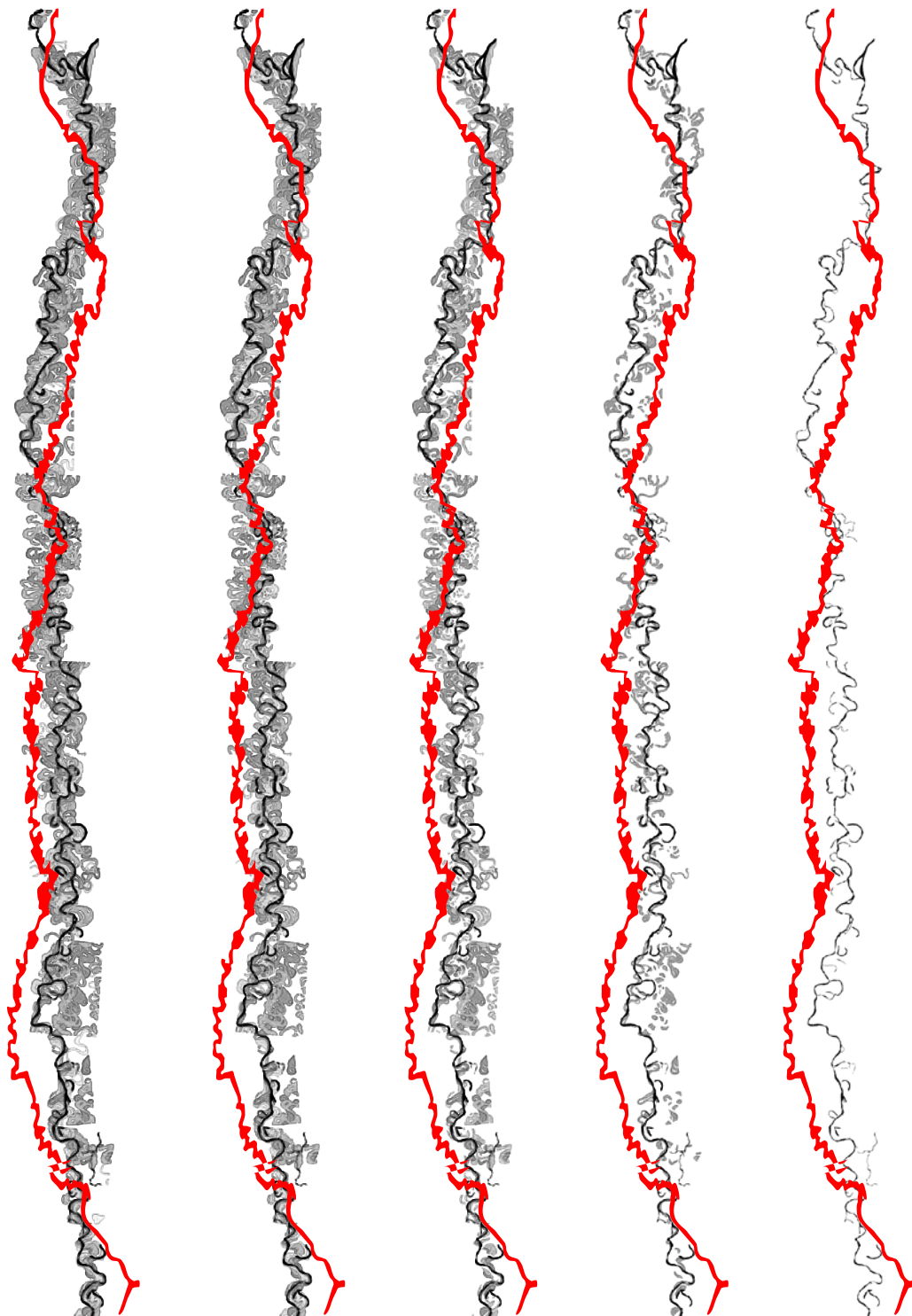
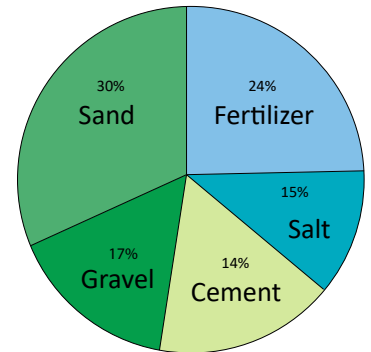
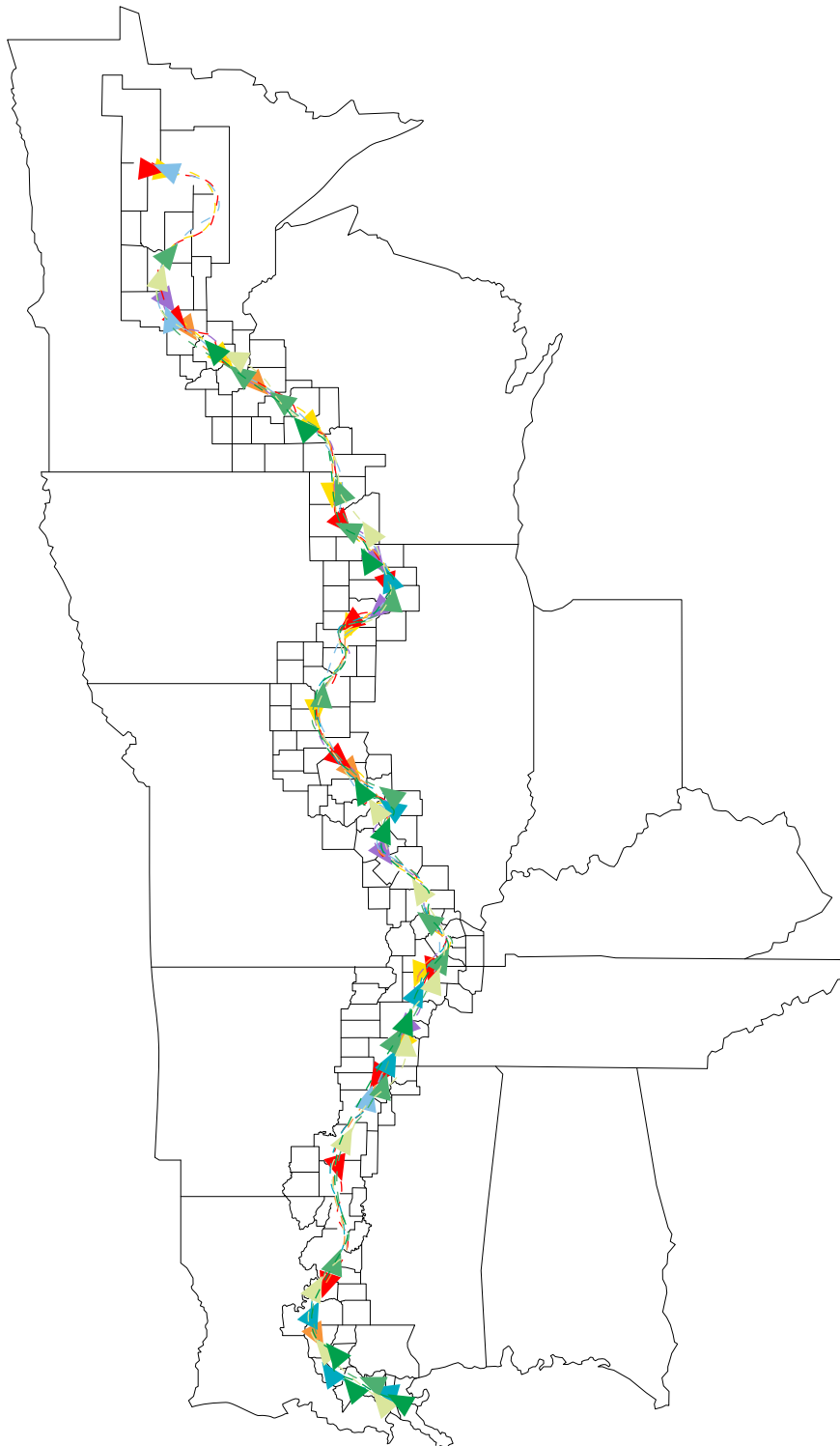
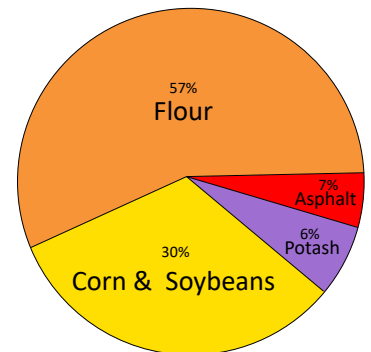


Figure 12. Mississippi River Course Change Based on Harold Fisk's Analysis

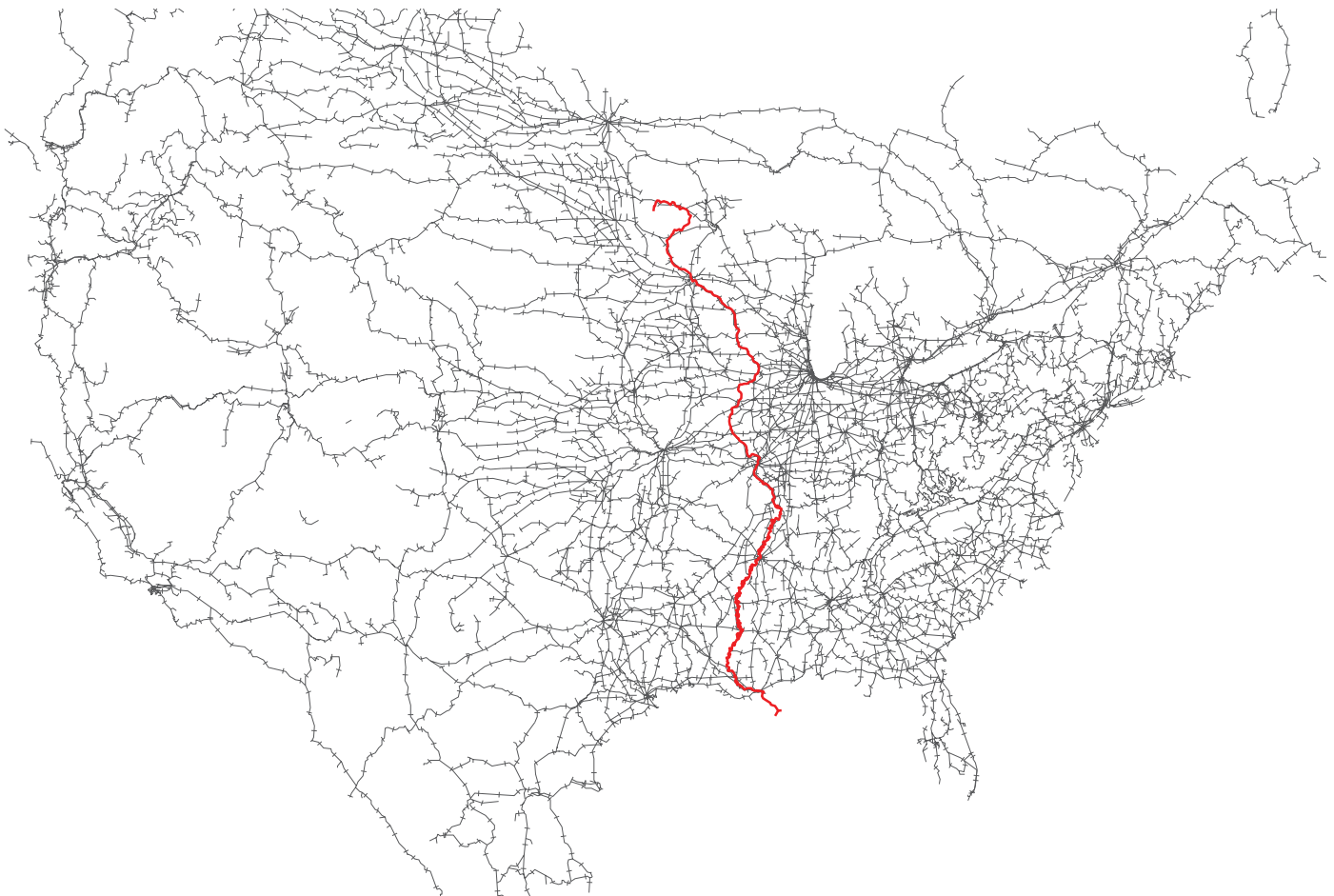


Upbound Commodities



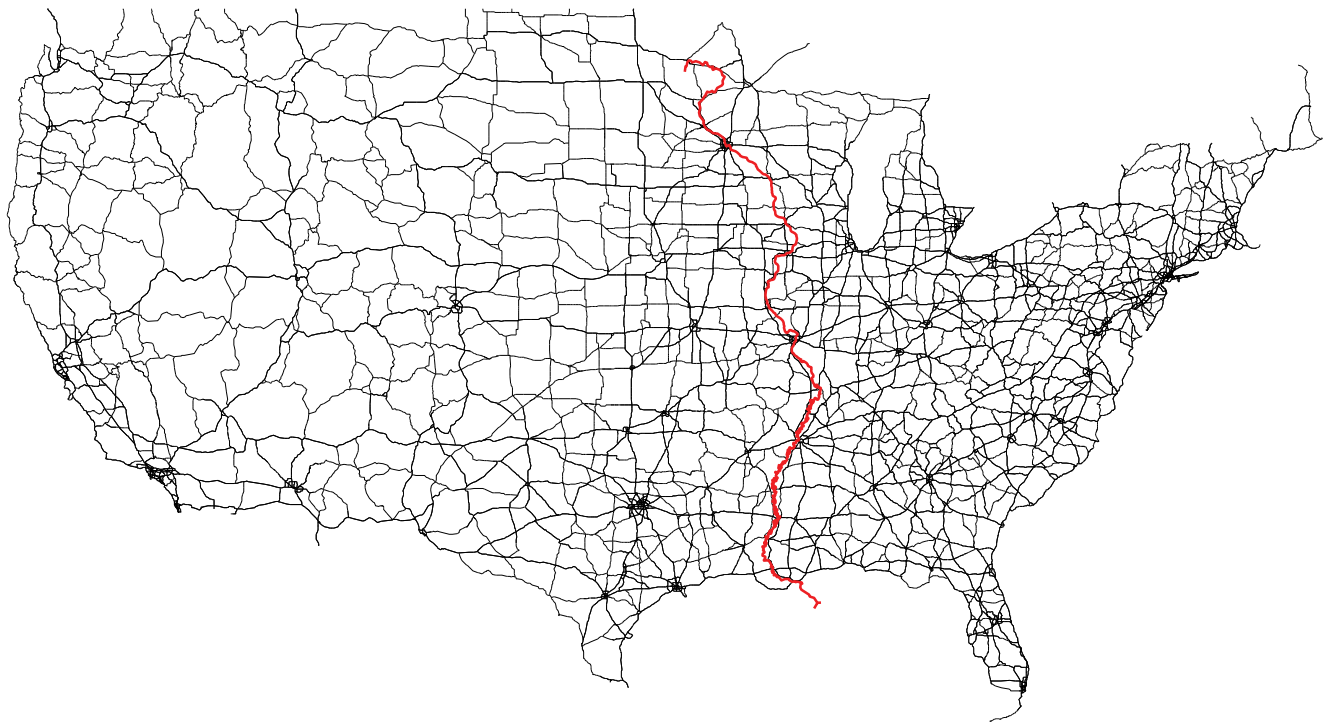
Downbound Commodities

Figure 13. Infrastructure: Up-bound and Down bound Commodities



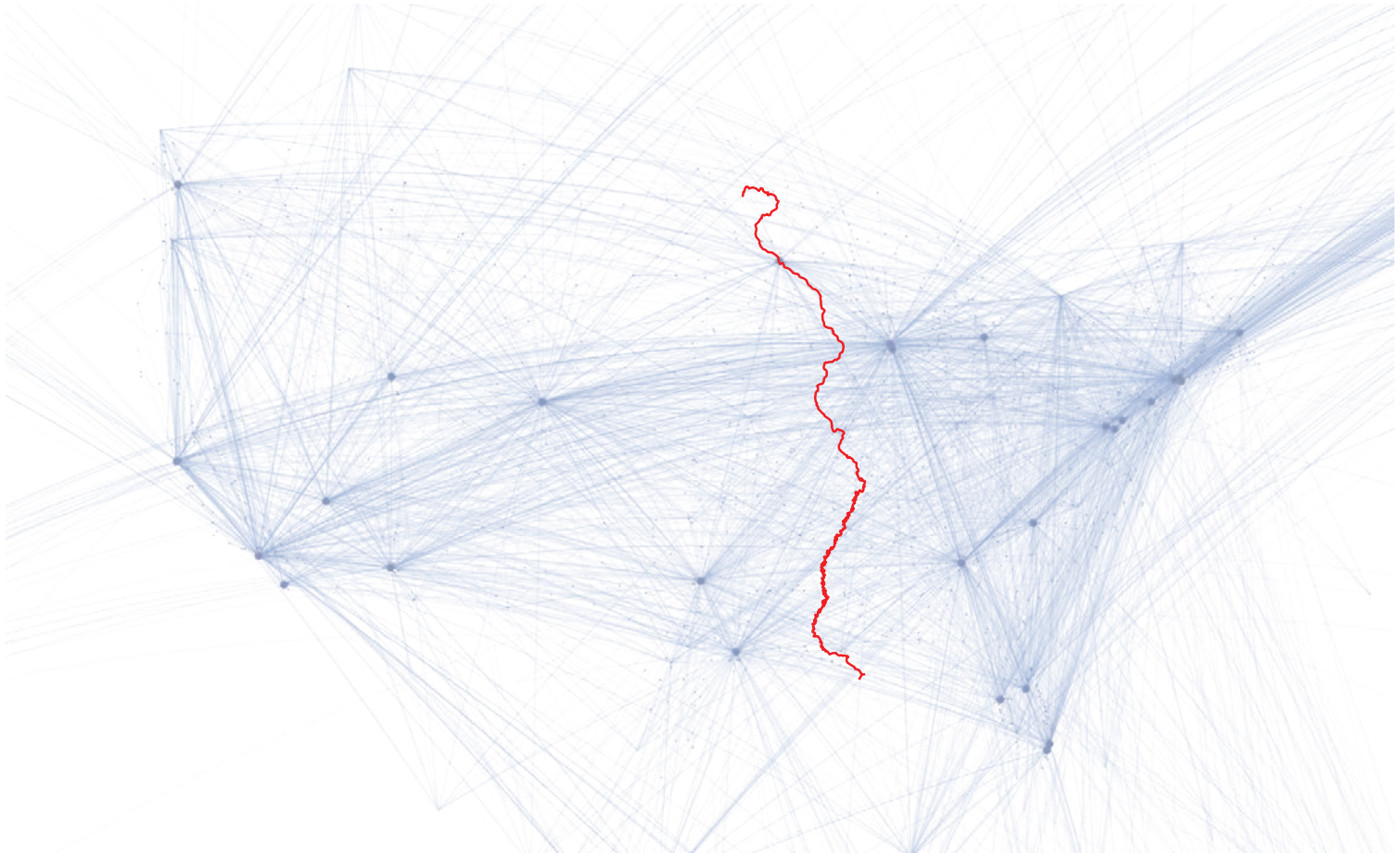
Infrastructure progressed to the railroad system, greatly reducing the significance of the Mississippi. Goods were able to be transported across state lines, regardless of water access, which opened up access to goods and transportation across the country.

Figure 14. Infrastructure: Railroads



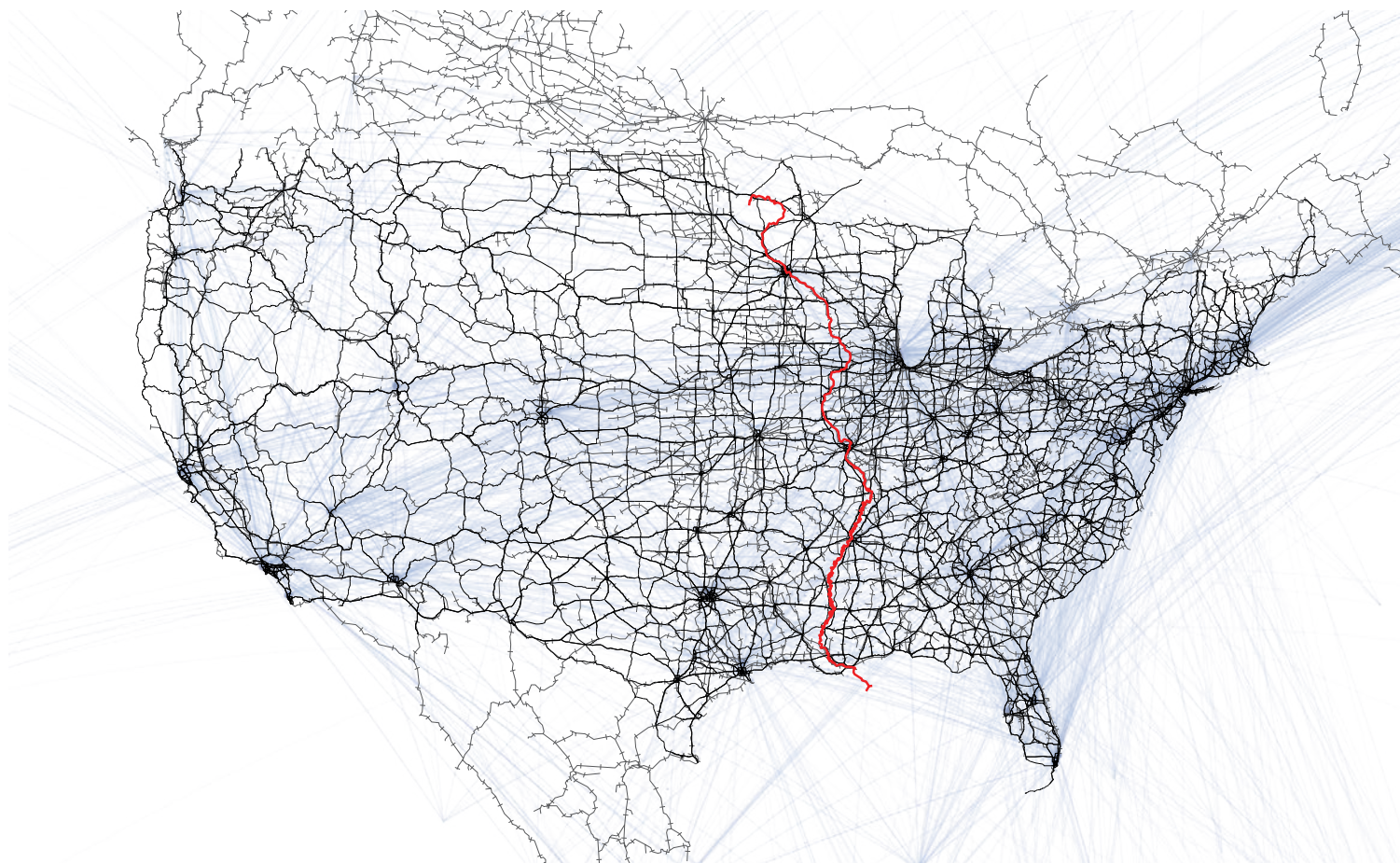
The next progression was highways and interstates. These further lessened the importance/need of the Mississippi because more and more people had personal vehicles that allowed them quicker access to goods and to travel a wider range.

Figure 15. Infrastructure: Highways and Interstates



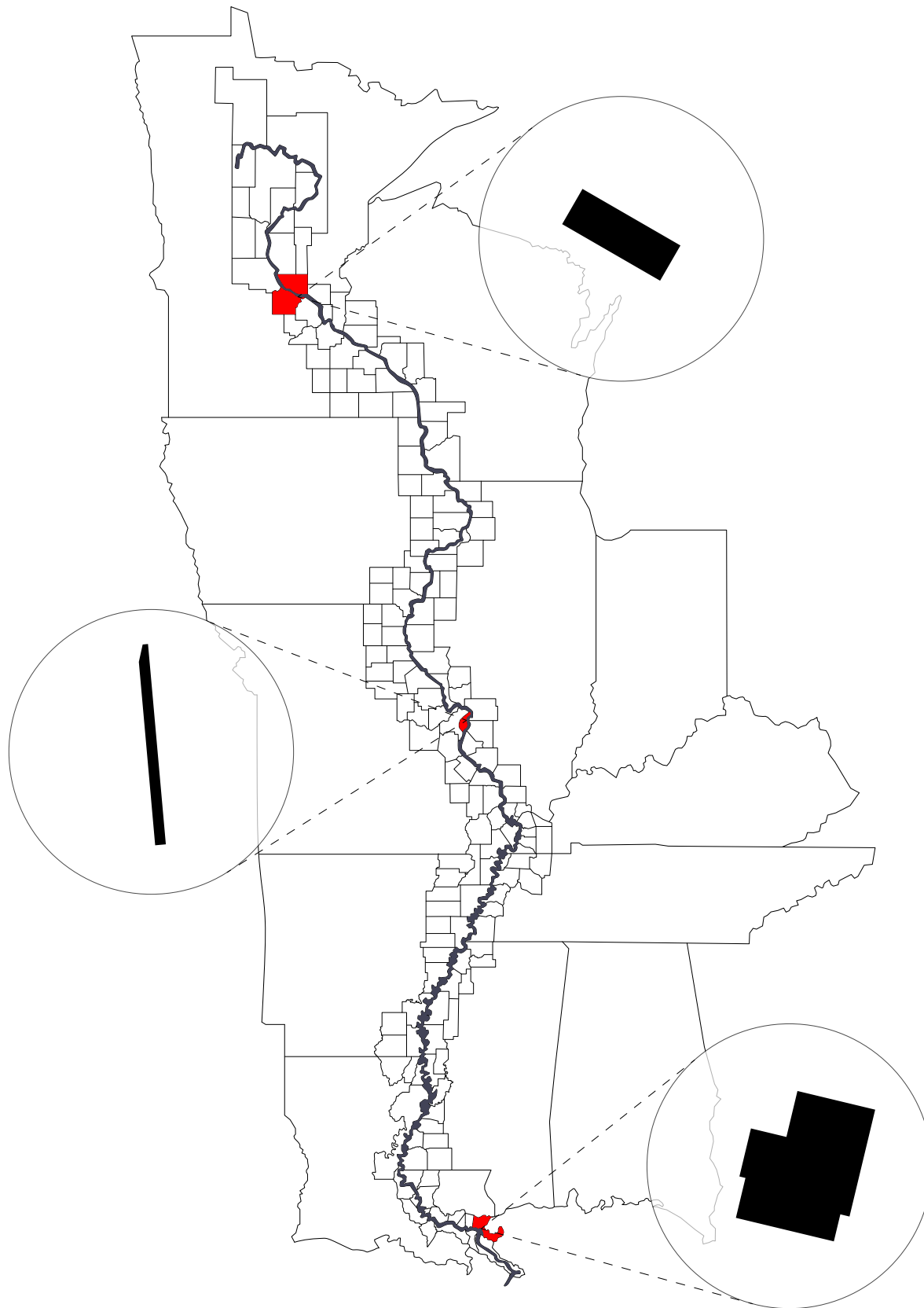
This map shows the airflow over America, the fastest form of travel, that applies to both goods and people. Jet engines allow goods from not only across the country, but from all over the world in a matter of hours instead of days, much faster than the traditional river travel.

Figure 16. Infrastructure: Airplanes



Looking at the US with all of the transportation advances, this map highlights the connectivity of America regardless of the Mississippi River, making it the least relevant it's ever been.

Figure 17. Infrastructure: Combined



We narrowed the scope further to focus on three of the major cities along the Mississippi River: Minneapolis, St. Louis, and New Orleans. The Minneapolis site is an abandoned flour mill, with a campus-like organization. The St. Louis site is an abandoned, single building, freight depot. The New Orleans site is an abandoned, campus-like, power plant.

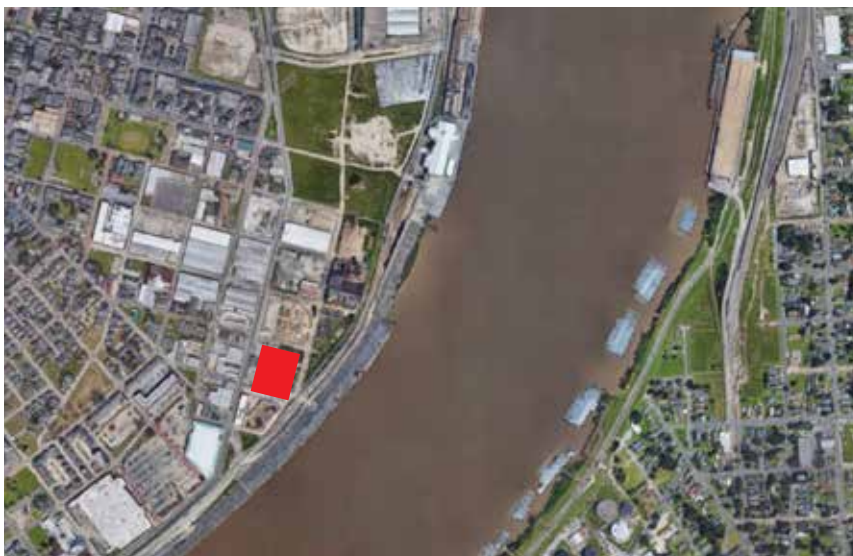
Figure 18. Mississippi River Cities



Minneapolis



St. Louis



New Orleans

Figure 19. Minneapolis
 Figure 20. St. Louis
 Figure 21. New Orleans

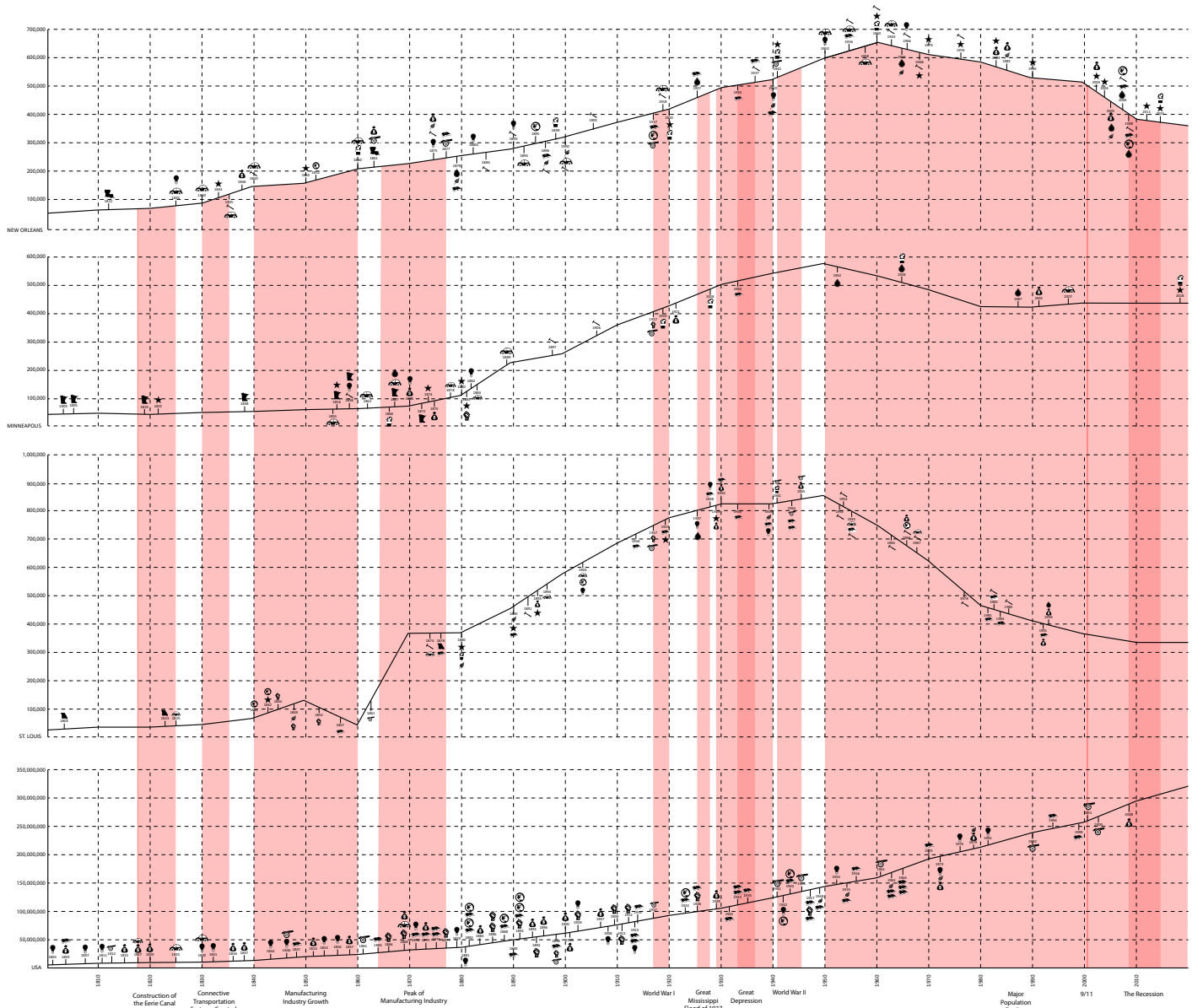


Figure 21. Economic Effects on Population Timeline



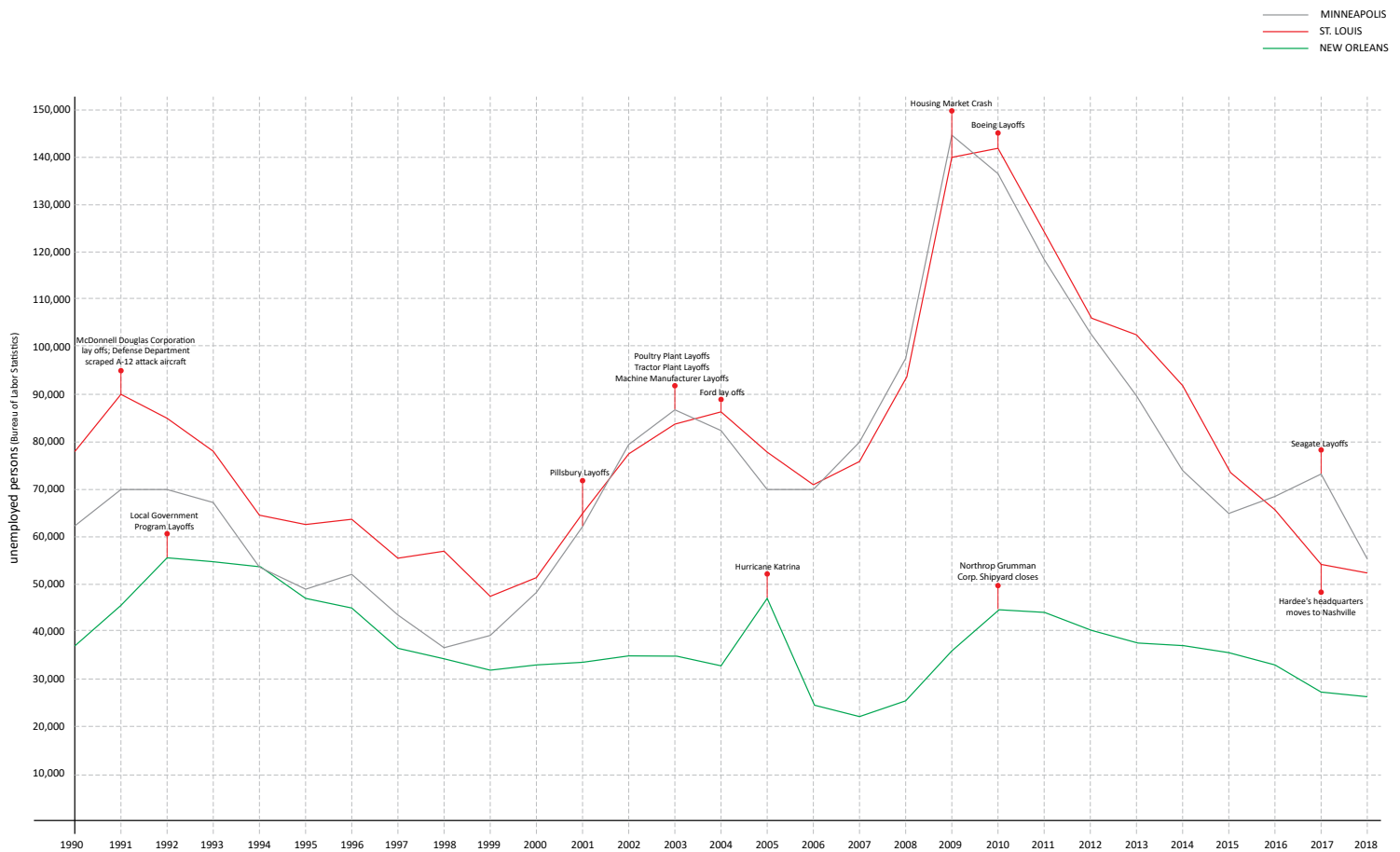


Figure 23. Unemployment Graph

We created a timeline of the key economic events in the three selected cities as well as the US. The events are denoted with icons representing key components of the economic rise and fall. These include: flooding, economic growth or crisis, war and impact of war, immigration, transportation and connectivity, new innovation, unions and riots, industry change, movement of industry, legislation, development and construction, and environmental impacts. The lines track population showing its relationship to economic events. The key overlapping trends were the result of a regional/national event, which are highlighted in the timeline. The events include: the construction of the Erie Canal, construction of railroads, rise in manufacturing, the peak of manufacturing industry and the reconstruction era post Civil War, World War I, the Great Mississippi Flood of 1927, the Great Depression countered by the New Deal Programs, World War II, industry leaving America resulting in an overall population decline, 9/11, and the Great Recession.

We tracked unemployment trends in the three key cities based on key events like major companies leaving the cities and layoffs. The graph shows unemployed persons. At the height is the highest point of unemployment. In Minneapolis these events included Pillsbury layoffs, poultry plant layoffs, tractor plant layoffs, machine manufacturer layoffs, housing market crash, and Seagate layoffs. In St. Louis the events were McDonnell Douglas Corporation layoffs, Defense Department scrapping A-12 attack aircraft, Ford layoffs, Boeing Layoffs, and Hardy's headquarters moving to Nashville. In New Orleans the events were local government program layoffs, Hurricane Katrina, and Northrup Grumman Corporation Shipyard closing.

C a n n a b i s



Figure 24. Marijuana Greenhouse
"Marijuana Industry Boosts Demand for Tri-county Industrial Space." Pacific Coast Business Times.

By inserting a new industry into the Mississippi River region, economic stimulation can occur in the area. Cannabis, both hemp and marijuana, is a growing industry that primarily exists on the edges of the country; stimulating economies, creating tax revenue, and decreasing unemployment. If this industry were to be introduced to the middle of the country, it could help the middle be relevant once again. Because of its agricultural production, it is an ideal industry for the region, in that the skill set and infrastructure is already present. On the industrial scale, hemp can be used for textiles, food production, and biofuels.¹ By using this as a rotating crop within the existing agricultural infrastructure, along with corn and soybeans, this can greatly reduce soil degradation, which is common in the Midwest due to industrial farming. Hemp is grown in typical agricultural field conditions that exist in rural areas, whereas marijuana is grown in greenhouses, which can occur in any topology. Marijuana is a

smaller scale industry, but has the opportunity to become larger through medical research grants from universities and pharmaceutical companies.

Cannabis has had a long history in the United States as far as its origins, legalization, criminalization, etc. Hemp was very important agriculturally during the United States' early history when the colonies were established. The growing of hemp was highly encouraged for the production of rope, sails, and clothing. In 1619 Virginia required hemp to be grown on every farm because it was so valuable for its subsequent industries. The crop was such an asset that in Virginia, Pennsylvania and Maryland it was a form of currency. The use and growing of hemp reached its peak by the end of the Civil War when cotton was introduced. However, at that time, marijuana was gaining traction and was beginning to be used in medicine.² In the late nineteenth century it was openly

sold in public pharmacies.

In 1910 marijuana was introduced as a recreational drug after Mexican refugees brought marijuana to the US when they fled from the Mexican Revolution. With the introduction of recreational marijuana came the fear of the drug and the prejudice about the Spanish speaking immigrants associated with marijuana. Anti drug campaigns began referring to it as "Marijuana Menace" and attributed crimes to the plant and those who use it. In the following decades recreational marijuana grew in popularity among specific communities. In the 1950s the Beat Generation, a group who was in favor of artistic freedom and bohemian ideals, emerged. They were among one of the first groups to fully embrace marijuana as a recreational drug, as a position of opposing conventional society.³

1. Cadena, Aaron. "Hemp vs Marijuana: The Difference Explained – CBD Origin – Medium." Medium.com. September 10, 2018.
2. "The Complicated History of Cannabis in the US." History.com.
3. *ibid.*



Figure 25. Medical Marijuana Quality Control

The criminalization of marijuana began during the era of prohibition in the middle of the Great Depression. With the country in a state of economic and social despair, the government eagerly sought out a scapegoat. This scapegoat was marijuana and the people who were using it; the Mexican and Black communities. The government portrayed the drug and the people who were using it as a threat to the country that was seemingly already hitting rock bottom. As a result, the country began the process of banning marijuana. By 1931 twenty nine states outlawed marijuana and in 1937 the Marijuana Tax Act was passed, making the plant illegal in the United States. Only those who paid excise tax for authorized medical and industrial uses could have restricted limited possession.

During World War II the hemp industry spiked because of its use and value for producing military materials such as parachutes and marine cordage. The government was encouraging people to grow hemp to the point of handing out free seeds and draft deferments for people who were willing to stay home and grow hemp. As a result there were 375,000 acres of hemp harvested by 1943.

Between 1951 and 1956 the federal government began enacting harsher punishments for possession of marijuana. These laws set mandatory sentences for marijuana offenses; starting with a first time possession offense resulting in a 2-10 year prison sentence and a fine of up to \$20,000. Despite the harsher punishments the use of marijuana was growing in popularity among all demographics, including white middle and upper classes. This was because of the combination of the changing political and cultural climates and studies by President Kennedy that show that marijuana did not lead to violent behavior and also did not result in the use of heavier drugs.⁴

The War on Drugs, started by Richard Nixon in 1971, created an even greater stigma against marijuana and caused incarceration rates and violence between gangs to spike, as well as prejudices based on race, ethnicity, and income levels. This caused many “tough on drug” laws that placed thousands in jail for life for low level drug possessions and sales, particularly those of black and Latino descent. These laws were many times skewed in ways that would target the Black and Latino communities. An example of this was the criminalization of selling powder vs. crack cocaine. Both having the same chemical makeup, but powder became less of a crime because of its frequent (and open) use among white Wall Street Bankers.⁵

With the cannabis industry becoming legalized in many states, the opportunities to make money by opening dispensaries or growing cannabis has allowed many people to thrive financially. However, there are always hidden ways that keep minorities from taking part in this rapidly growing economy. For example, former felons are not able to open dispensaries, despite the fact that many times they were arrested on low level drug charges but given a harsher punishment because they were a minority. A similar issue could occur for

the small business owners that are taking advantage of the new industry if large scale corporations were to take part in selling cannabis.⁶ Would the acceptance from a major company such as a pharmaceutical giant change the perception of cannabis sales in America? An example of a taboo product that was re-branded by pharmaceuticals is Viagra, an issue that was never discussed, but has now been completely accepted by society. Could the pharmaceutical industry do the same for cannabis?

If this were to happen, the economic boom would no longer be at a local scale, but at the hands of the already rich and powerful. With that kind of influential backing, the cannabis industry could really take off on a larger scale, creating jobs and economic opportunities for subsequent businesses. One could argue that the reduction of stigma against cannabis products could lead to lower sentencing of low level drug possessions and less targeting of minority neighborhoods for possession searches.

The medicinal qualities of cannabis have been proven. Currently approximately 85 percent of Americans are in support of legalizing medical cannabis and it is estimated that several million Americans are currently using it medically.⁷ One branch of medical cannabis derived from the hemp plant is cannabidiol, also known as CBD. This strain of cannabis has little to no intoxicating properties and is therefore one of the least controversial and on the forefront of the industry with multi level marketing schemes and wide acceptance. CBD has no THC (tetrahydrocannabinol), the active component in marijuana that causes the high. The benefits of CBD include relief of insomnia, anxiety, spasticity, and relieve pain for life threatening conditions like epilepsy.

As far as medical marijuana, the most common use is for pain relief and control. Medical marijuana eases nerve pain, particularly multiple sclerosis, which few other options are able to do. The other options that exist are sedating and interfere too much with everyday life, something that does not occur as a result of using medical marijuana. Medical marijuana is not strong enough to cure severe pain like a broken bone but is extremely effective with chronic pain, especially that comes with age. One of the main appeals of medical marijuana is the effect that it could have for the opiates crisis. Instead of turning to more intense drugs for chronic pain relief there is opportunity for a safer, non addictive alternative. A study done found that Medicare Part D prescriptions filled for opioids decreased dramatically in states with medical marijuana legalization.⁸ On a less severe scale, medical marijuana can also replace Advil, which is known to cause liver and kidney issues if used too frequently. People who suffer from Parkinson’s disease, fibromyalgia, endometriosis, interstitial cystitis, and many other conditions credit medical marijuana as a muscle relaxant unlike any other prescribed drug. Medical marijuana not only has benefits for physical ailments but also emotional. There has been extensive research done on its use for veterans who suffer from PTSD.⁹ The studies unanimously show that patients who use medical marijuana report that their symptoms

have greatly decreased.

The two strains of cannabis, marijuana and hemp, are able to be grown at multiple scales, allowing the industry to be able to be successful on the larger, industrial scale with hemp’s ability to be spun into textiles, and on a smaller scale with medical marijuana. Because there are two different scales that require different growing conditions, there will need to be different architectural typologies. The greenhouse that regulates and gives security to the marijuana production can be inserted into almost any site, giving it great flexibility. However, for hemp to be profitable, a large quantity must be produced, limiting it to larger scale farms and rural areas. By substituting hemp for other products, such as paper, less trees would have to be cut down, improving the environment.

At the federal level, marijuana remains classified as a Schedule I substance under the Controlled Substances Act, considering it to have a high potential for dependency and no accepted medical use, making distribution of marijuana a federal offense. In 2009, the Obama Administration sent a memo to federal prosecutors encouraging them not to prosecute people who distribute marijuana for medical purposes in accordance with state law. In 2013, the U.S. Department of Justice announced an update to their marijuana enforcement policy. The statement read that while marijuana remains illegal federally, the USDOJ expects states to create “strong, state-based enforcement efforts.... and will defer the right to challenge their legalization laws at this time.” The department also reserves the right to challenge the states at any time they feel it’s necessary. However, in 2018, Attorney General Sessions issued a Marijuana Enforcement Memorandum, that overturned the previous policy, which allows federal prosecutors to decide how to prioritize enforcement of federal marijuana laws. States with medical marijuana laws generally have a patient registry, which may provide protection against arrest for possession of a certain amount for personal medicinal use.¹⁰ Marijuana merchants are protected by a provision in the federal budget that prohibits the Justice Department from spending money to block state laws that allow medicinal cannabis.¹¹

The cannabis industry is the most viable programmatic insertion into the Mississippi River territory due to its many routes of production, including medical products, textiles, biofuels, and other subsequent industries. The existing infrastructure of the agriculture industry in this zone allows for it to seamlessly integrate into the crop rotation, reducing soil degradation of big farms. It has the most promise for economic stimulation at both the local and larger territory level. Cannabis, in the form of hemp and marijuana, has been deeply enrooted in the history of the United States (with mixed emotions). Deriving the programmatic insertion from the agricultural heritage of the Midwest and the cannabis heritage of the United States, this intervention looks back on the past while creating an effect that will be felt into the future.

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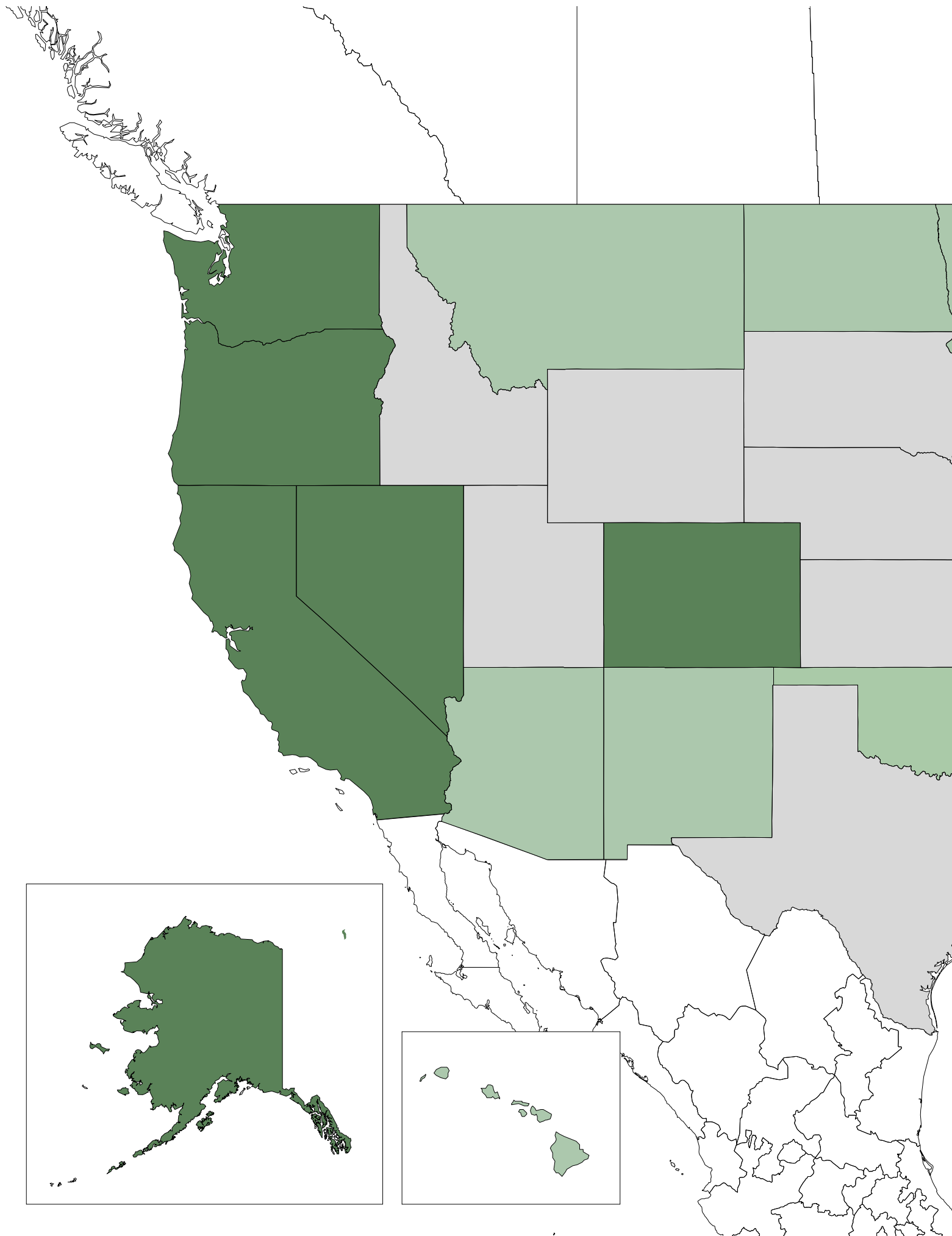
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STATE	LEGAL STATUS	DECRIMINALIZED
MAINE	Recreational	No
NEW HAMPSHIRE	Medical	Yes
VERMONT	Medical	No
MASSACHUSETTS	Recreational	No
NEW YORK	Medical	Yes
PENNSYLVANIA	Medical	No
RHODE ISLAND	Medical	Yes
WASHINGTON DC	Recreational	Yes
MARYLAND	Medical	Yes
NEW JERSEY	Medical	No
CONNECTICUT	Medical	Yes
OHIO	Medical	Yes
MICHIGAN	Medical	No
FLORIDA	Medical	Yes
LOUISIANA	Medical	No
OKLAHOMA	Medical	No
ARKANSAS	Medical	No
ILLINOIS	Medical	Yes
MINNESOTA	Medical	Yes
NORTH DAKOTA	Medical	No
MONTANA	Medical	No
WASHINGTON	Recreational	No
OREGON	Recreational	No
NEVADA	Recreational	No
CALIFORNIA	Recreational	No
ARIZONA	Medical	No
NEW MEXICO	Medical	No
COLORADO	Recreational	No
ALASKA	Recreational	No
HAWAII	Medical	No

YEAR LEGALIZED	# OF DISPENSARIES	LOCATION	TAX REVENUE
2016	8	Edge	\$83.4 million
2013	4	Edge	\$58 million
2018	5	Edge	\$2.8 million
2016	39	Edge	\$106 million
2014	22	Edge	\$3.1 billion
2016	35	Edge	\$581 million
2006	3	Edge	\$60.2 million
2014	5	Edge	\$17.7 million
2014	63	Edge	\$13.9 million
2016	6	Edge	\$60 million
2012	9	Edge	\$50 million
2016	56	Middle	\$34.8 million
2008	52	Edge	\$633 million
2016	59	Edge	\$17.4 million
2018	1	Middle	\$13 million
2018	96	Middle	\$8.3 million
2016	1	Middle	\$6.7 million
2014	55	Middle	\$221 million
2014	8	Edge	\$9.6 million
2016	8	Edge	\$1.6 million
2004	87	Edge	\$31.8 million
2012	423	Edge	\$315 million
2015	576	Edge	\$70 million
2016	65	Edge	\$102.7 million
2016	434	Edge	\$2.75 billion
2010	112	Edge	\$406.7 million
2007	89	Edge	\$4.9 million
2012	682	Middle	\$247 million
2014	69	Edge	\$12 million
2000	6	Edge	\$17.2 million

Figure 26. Marijuana Legalization Matrix



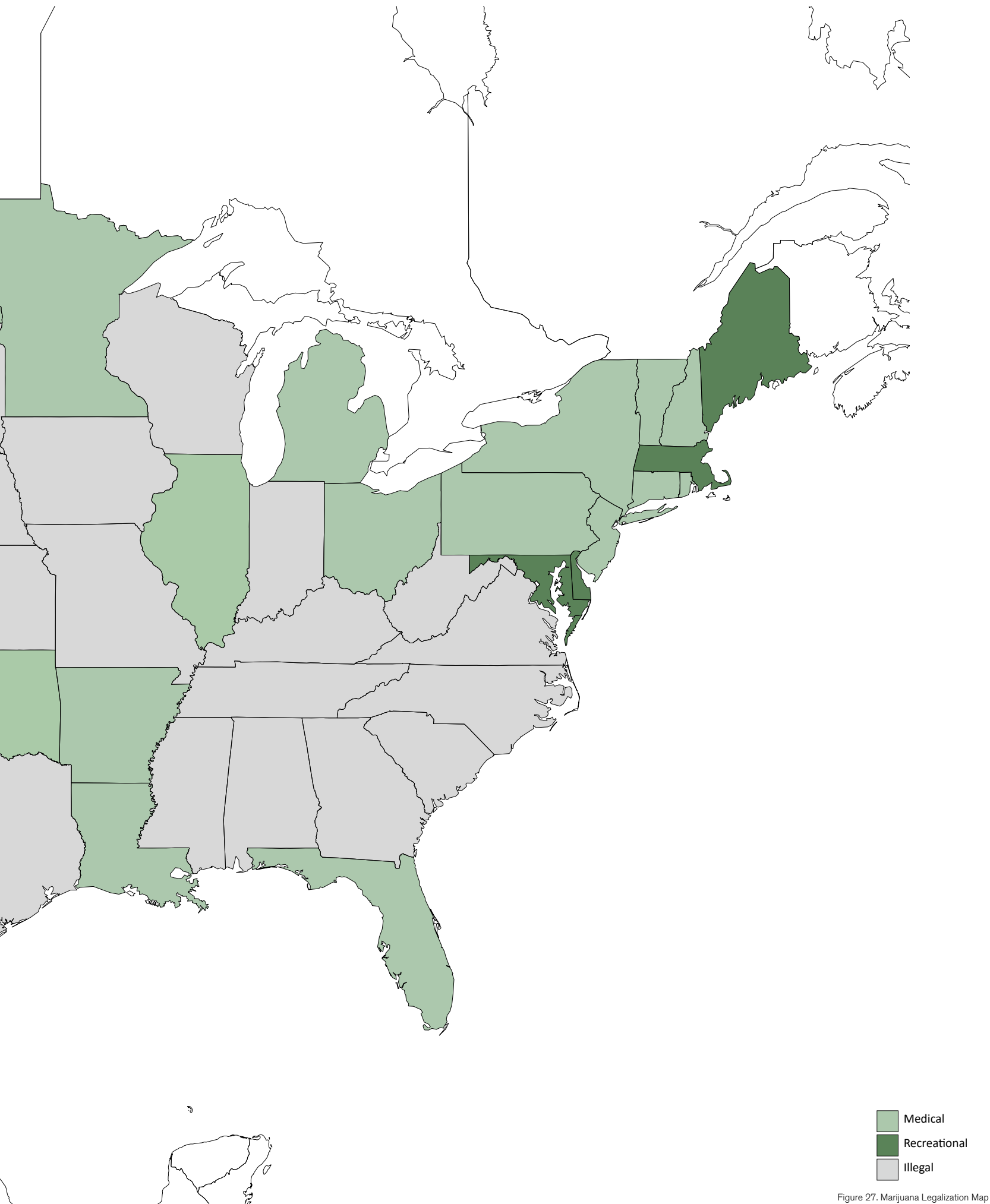
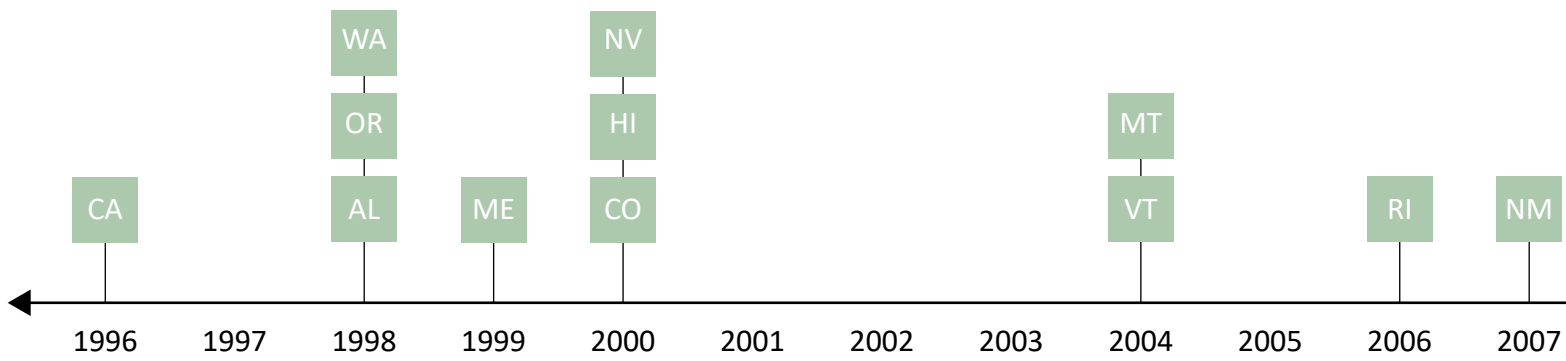


Figure 27. Marijuana Legalization Map



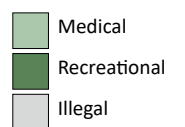
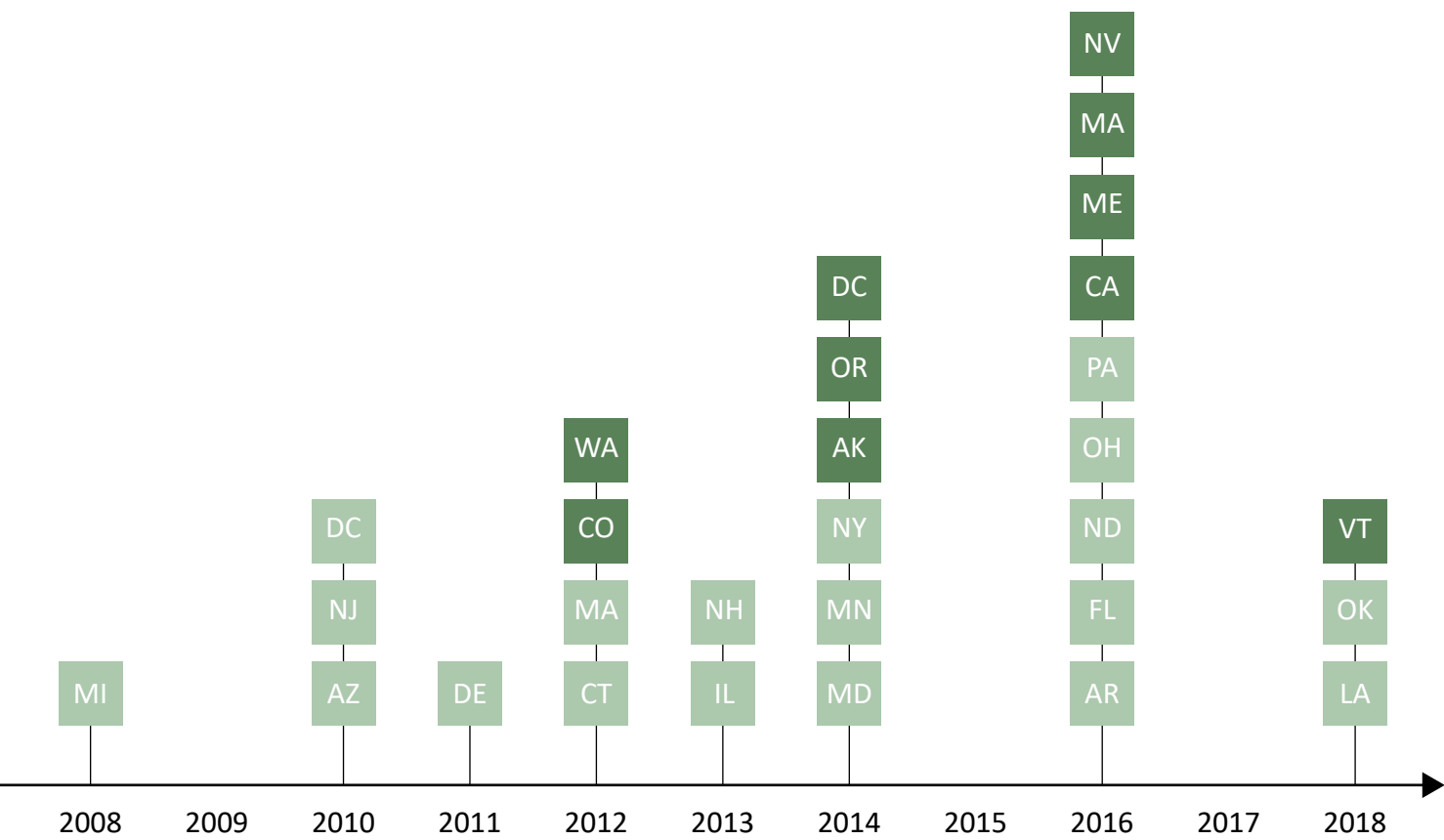


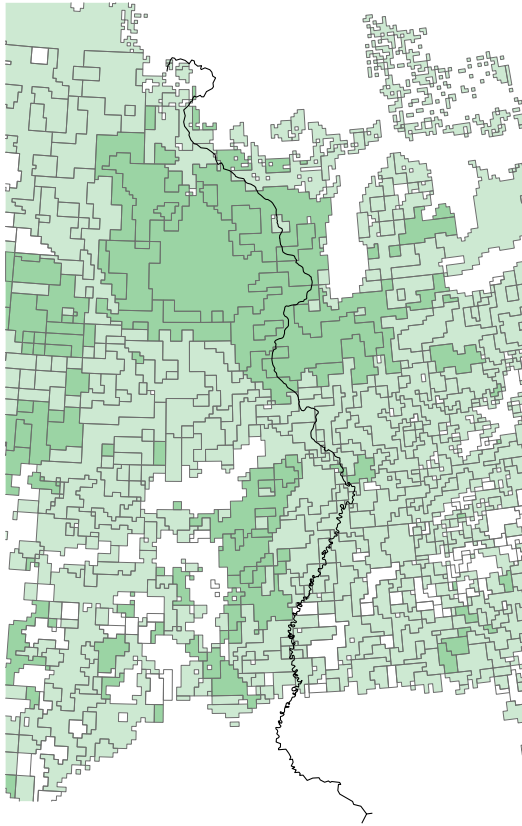


Figure 28. Marijuana Legalization Timeline

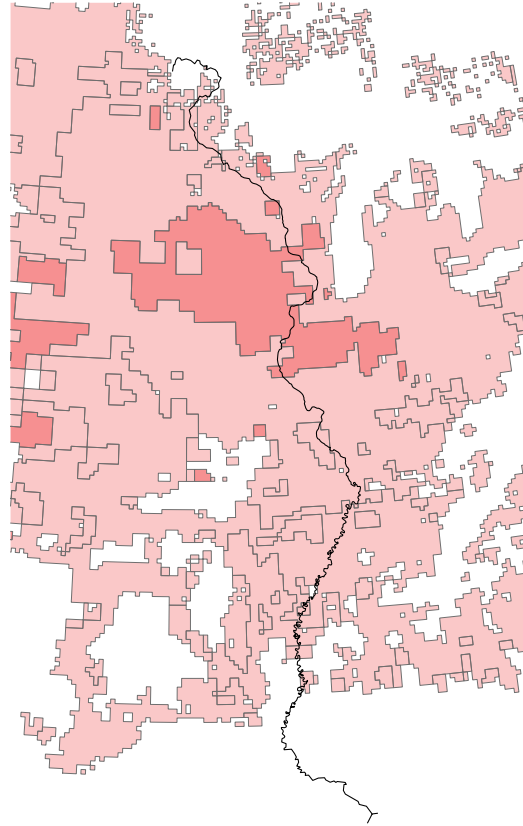
Cannabis	Form	Uses
Hemp		Sustainable products, Textiles, Medicine, Biofuel, Rope, Paper, Hemp Oil, Hemp Seeds
Marijuana		Recreational Use, Medicine

Growing Conditions	Pros	Subsequent Industries
Reaches 16ft tall and root taps down 1ft, well drained soil with Ph above 6.0, rainfall of 25-30 inches per year	Natural weed suppression, no pesticides required, pollen isolation, soil improvement in crop rotation, deep roots are soil aerator	Clothing retail, Food products, Industrial production
Indoor growing with grow room, cool dry area, natural light protected, HID grow lights, 3 month cycle	Controlled environment, maximize harvest output, hygienic environment	Medical research, Clinics, Dispensaries, Food products

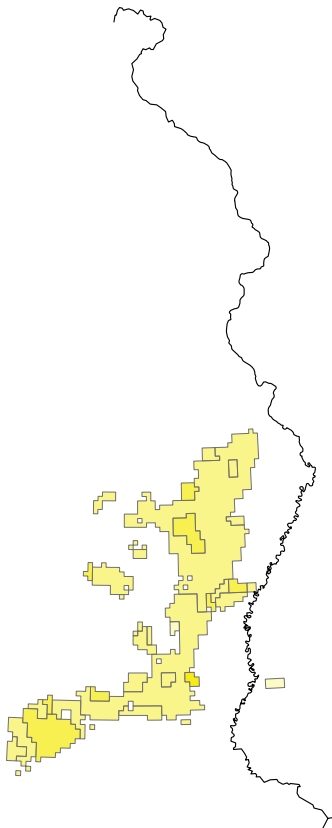
Figure 29. Cannabis Matrix



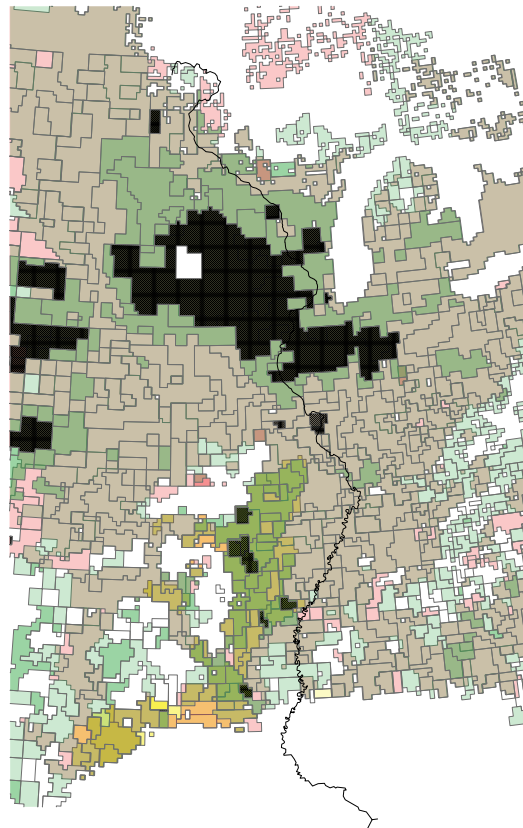
Corn Yield



Soybean Yield



Rice Yield



Marijuana Placement

Figure 30. Corn Yield
 Figure 31. Soybean Yield
 Figure 32. Rice Yield
 Figure 33. Marijuana Placement

We mapped out the density of existing agricultural systems that exist along the Mississippi River. These include corn, soybeans, and rice yields. The darkest color represents the areas with the highest yield and the lightest color the lowest yield. This shows how heavily the Midwest and Mississippi region relies on agriculture. With the Trump administration's recent tariffs against China (the main destination of soybean exports) it is predicted that there will be a decline in the agriculture industry, leaving a void for our proposed cannabis intervention. Layering all of the maps together we were able to determine the highest yielding land, which will be the best suited for cannabis production.

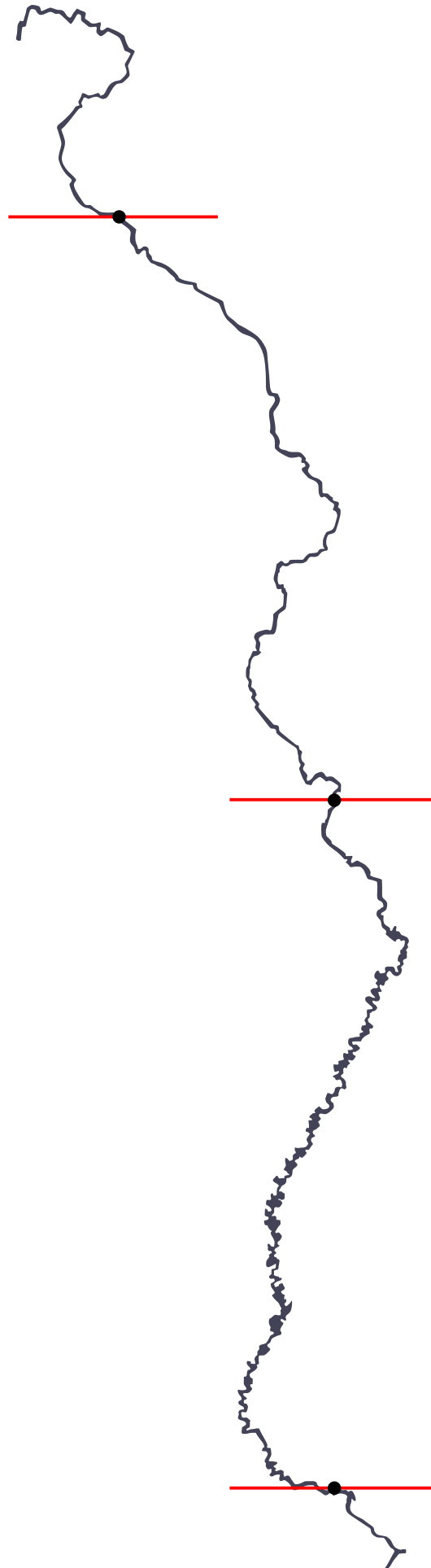


Figure 34. Urban to Rural Zones

With the selection of cannabis as our industry, we defined zones in Minneapolis, St. Louis, and New Orleans that span from an abandoned post-industrial urban site along the Mississippi to nearby rural zones. We are interested in the division of typologies that exists in the United States today, specifically territories like the Midwest. Our intervention will bridge the gap between these typologies by defining an industry that requires both. The bridging between typologies can foster economic growth for the greater region including all types of people, rather than just large corporations that would only exist in the urban zones. The colors represent the different typologies of urban, industrial, suburban, rural.

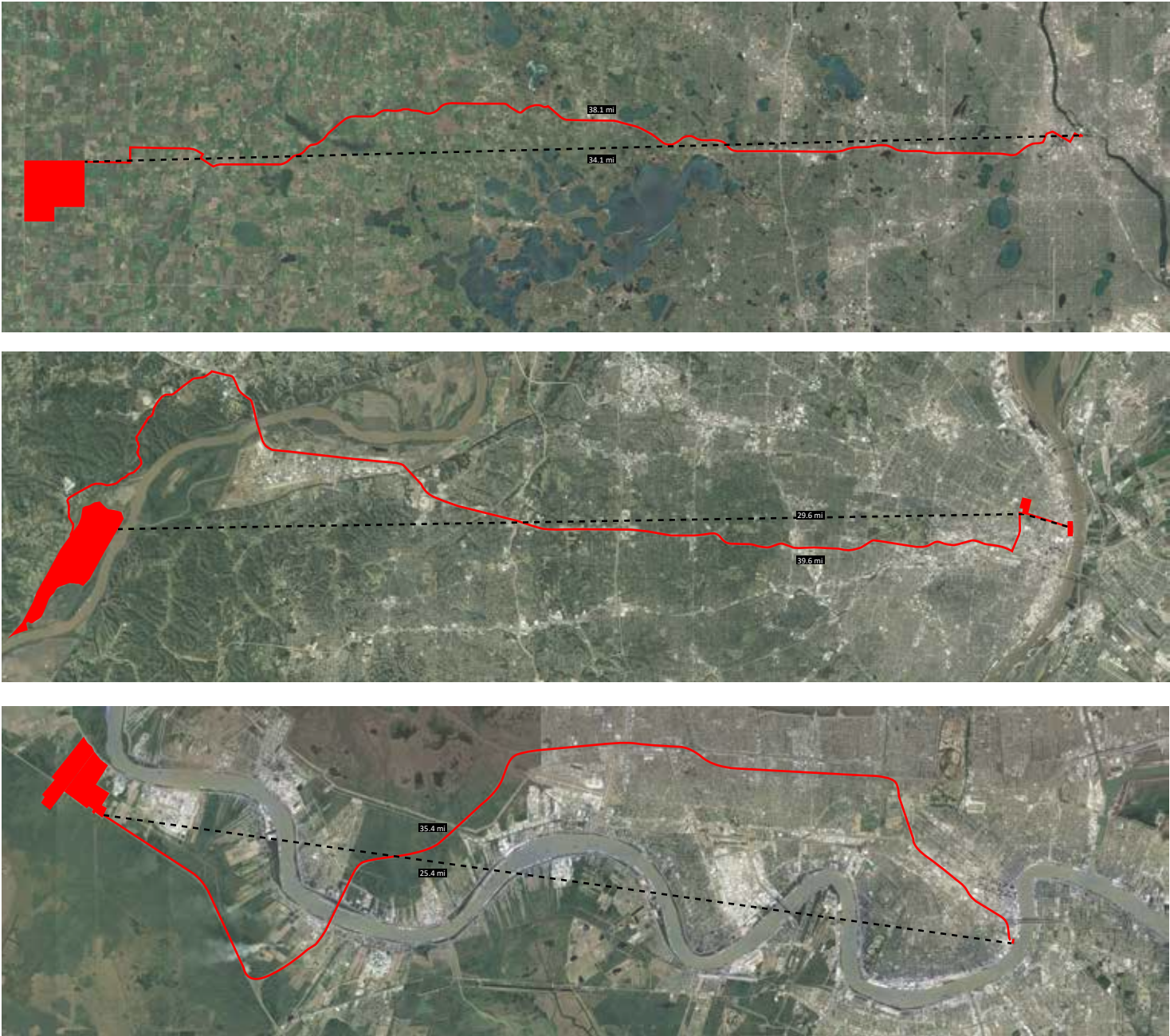


Figure 35. Urban Rural Zones Mapping

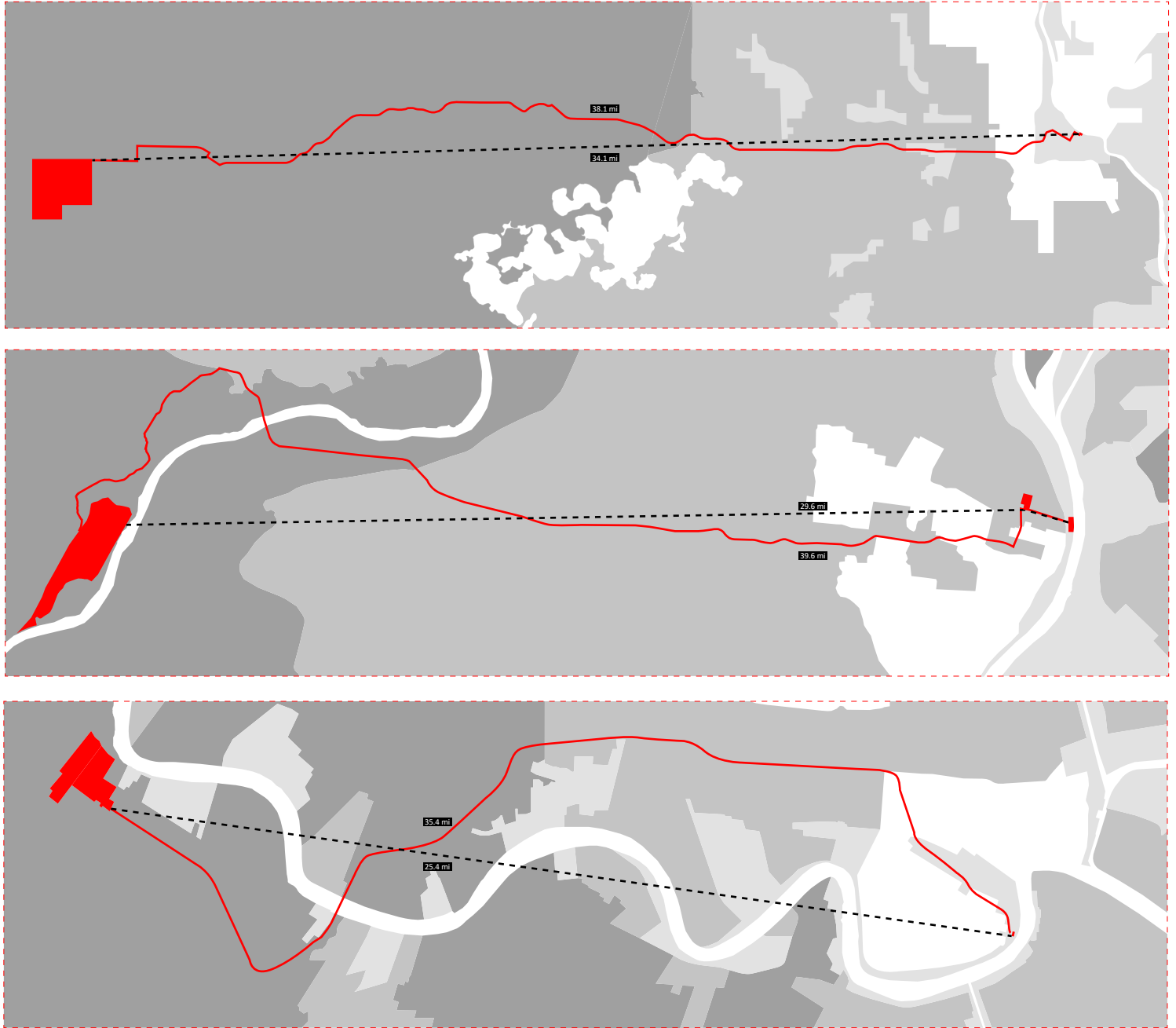


Figure 35. Urban Rural Zones Mapping



+



+



Rural - Hemp Production



Suburban - Marijuana Production



Urban - Distribution Hub & Subsequent Industries

Figure 37. St. Louis Sites

In St. Louis we selected three sites because of the nature of the cannabis industry. Hemp is grown in typical agricultural field conditions that exist in rural areas and marijuana is grown in greenhouses, which can occur in any area. Using our abandoned post-industrial site along the Mississippi River as the distribution hub and complex for subsequent industries, the marijuana greenhouses located in abandoned suburban plots, and the hemp production in nearby rural fields, we can bridge the gap between typologies.

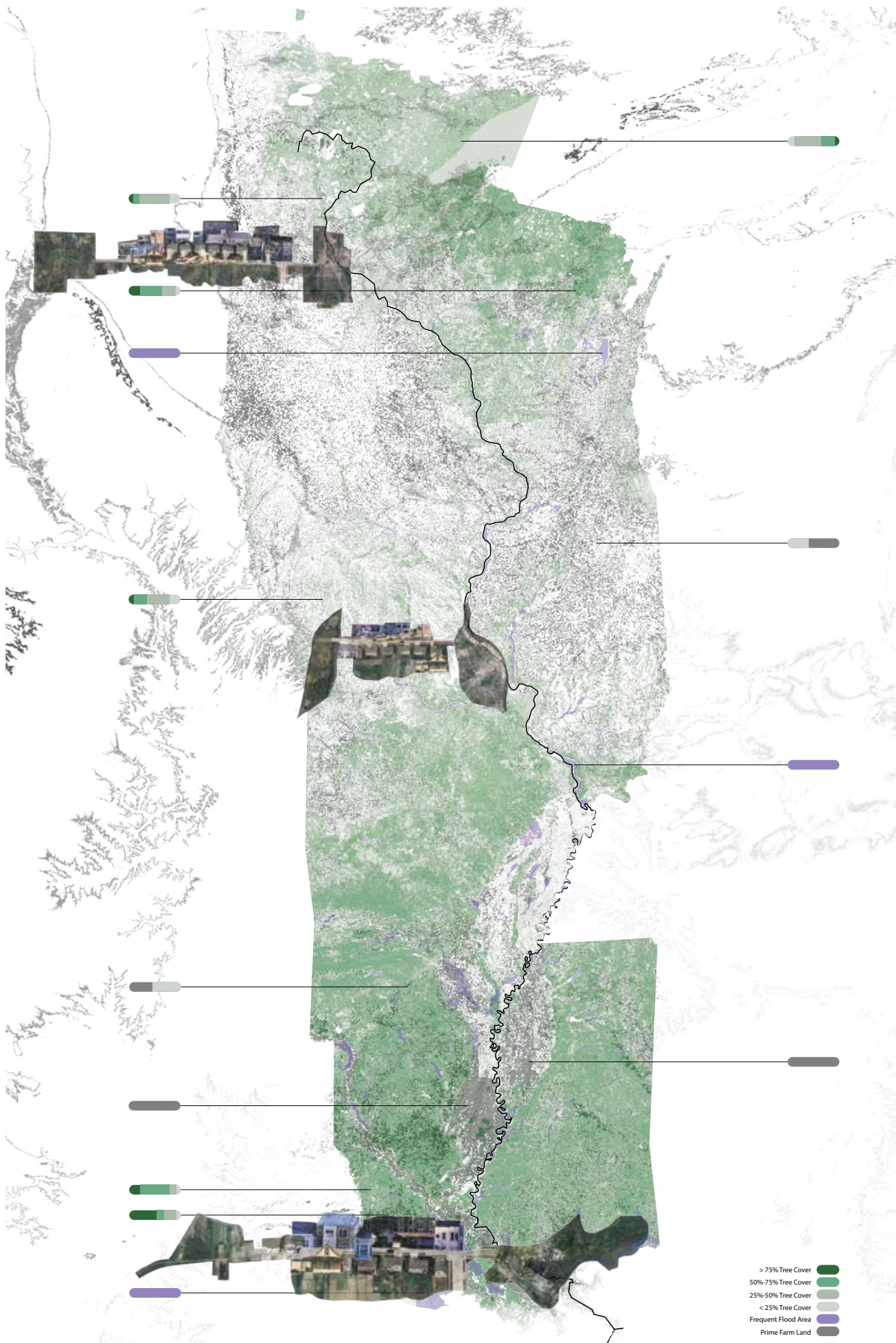
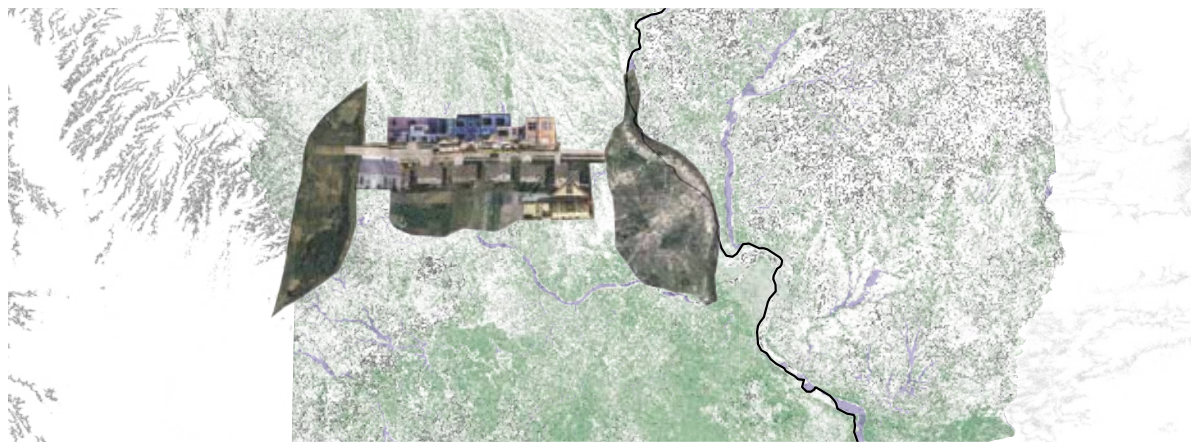
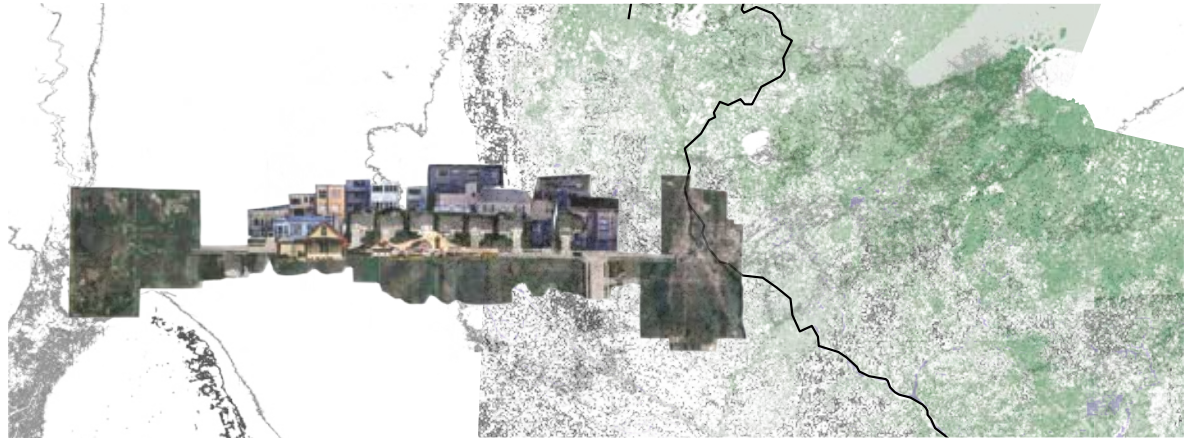
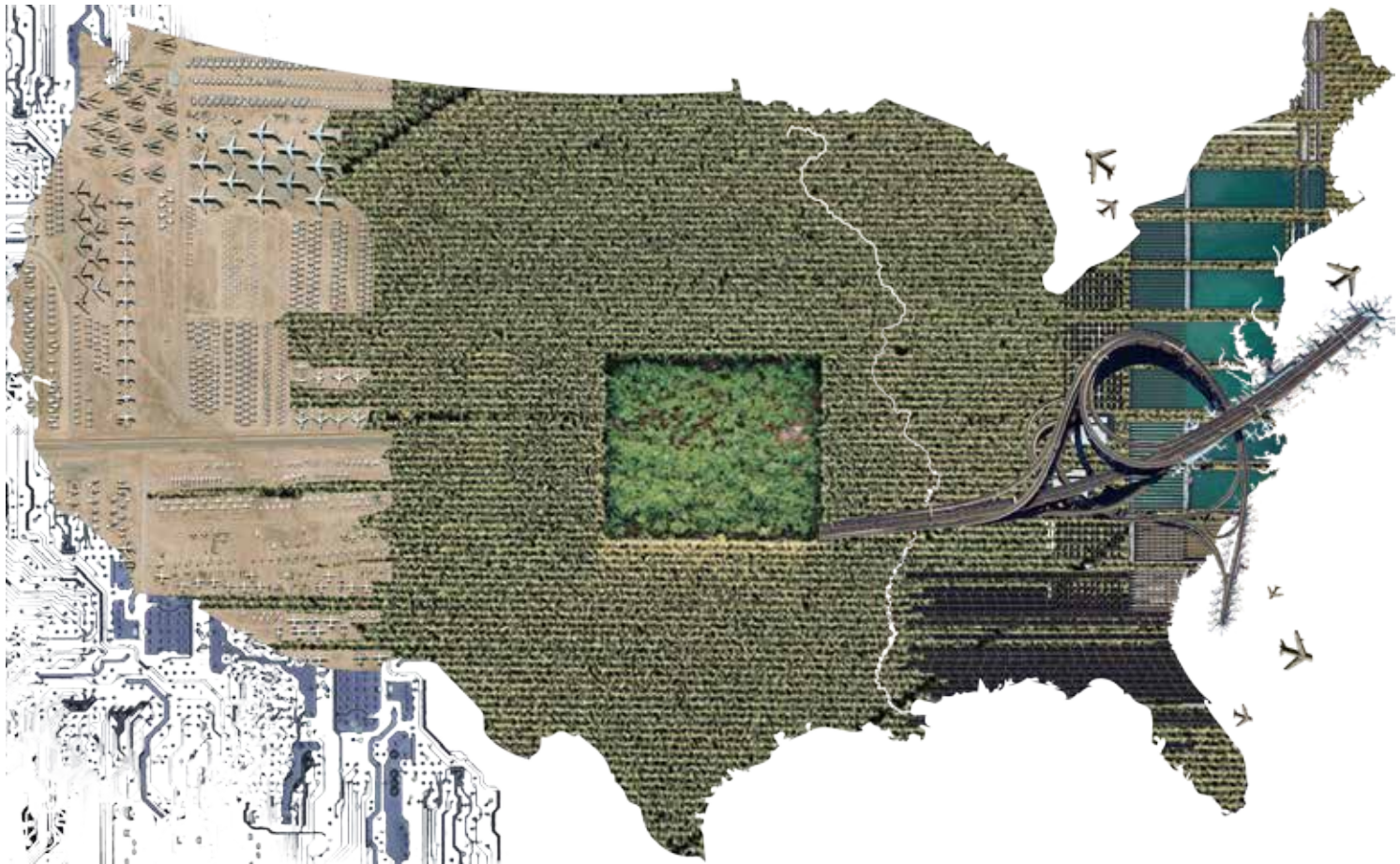


Figure 38. Land Use Collage



This collage looks at the land use of the Mississippi River territory and the high levels of farmland in the region, along with tree cover and high flood zones that affect agricultural zones. The overlaid collages are narratives about the blurring of typologies that occur as a result of the connection between the urban and rural zones of our intervention.

Figure 39. Minneapolis Collage Urban to Rural
 Figure 40. St. Louis Collage Urban to Rural
 Figure 41. New Orleans Collage Urban to Rural



A narrative on globalization and the center vs. edge relationship. The edges have more connections to outside resources and markets, which has helped them flourish, while the middle is landlocked and primarily farm land. The placement of the cannabis farm within the corn field is representative of our proposed industrial intervention.

Figure 42. Edge vs. Center Collage



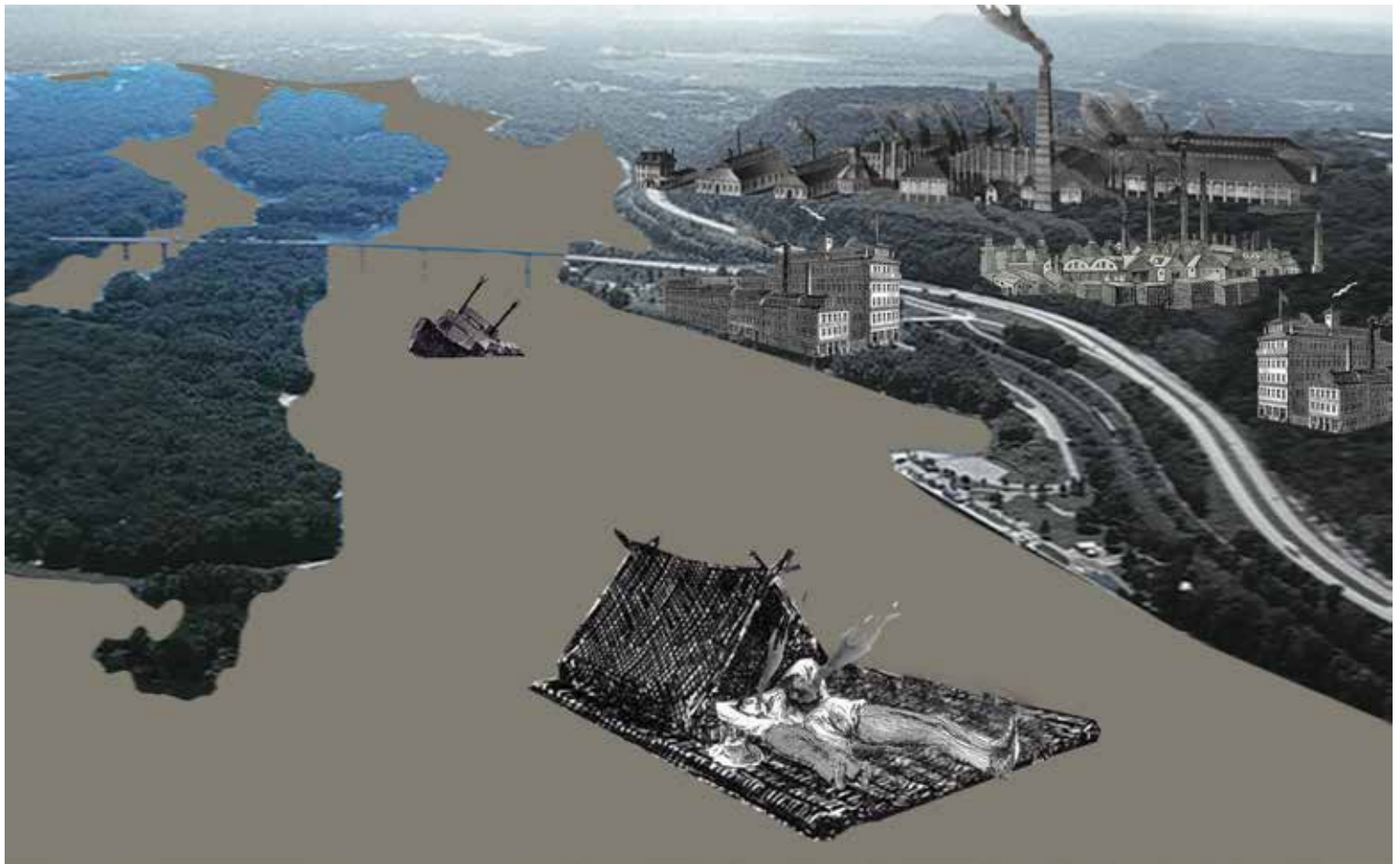
A statement on globalization with industry leaving America for manufacturing locations overseas. Comparing the advanced infrastructure of one of these cities (China) to the former steamboat travel on the Mississippi.

Figure 43. Globalization Collage



The separation between urban, suburban, and rural sites is extreme in America, similar to the effects of the Berlin Wall, which separated one city into four.

Figure 44. Urban Rural Divide Collage



The Tales of Huck Finn and Jim are quintessential to the Mississippi River and this collage highlights the changes from nature and agriculture to the introduction of heavy manufacturing during the height of industry.

Figure 45. Industrial Mississippi Collage



The juxtaposition between industry and agriculture and how our intervention is merging the two by using the old abandoned factory typology with the proposed cannabis industry.

Figure 46. Agriculture Manufacturing Collage



The insertion of the cannabis program creates a new form of manufacturing, which replaces the previous industry. The economy that was once supported by manufacturing is now supported by cannabis.

Figure 47. New Industry Collage



This image shows America's acceptance of tobacco, which has created a multi-billion dollar industry, similar to our proposed cannabis industry.

Figure 48. Tobacco Collage



Comparing the nuclear disaster of Chernobyl, in which hemp was used to cleanse the earth of toxins, to St. Louis and the failures of the previous attempts to revitalize the city with Pruitt Igoe.

Figure 49. St. Louis Chernobil Collage

Design



Figure 50. Galerie of Machines, Dutert, 1889

Moving forward into the design phase, we studied neoisms in architectural history and the factory typology to create a set of parameters to determine what is the architecture of the neo-industrial in America. We are defining neo as “a new _____,” so in our case, a new industrial era. By looking at architectural precedents we were able to draw comparisons between styles and time periods, contrasting the neo with the original. This allowed us to identify the differences and what each style took from the previous. We will be using these examples to guide our process of moving architecturally into the neo-industrial era, taking elements from the previous industrial age.

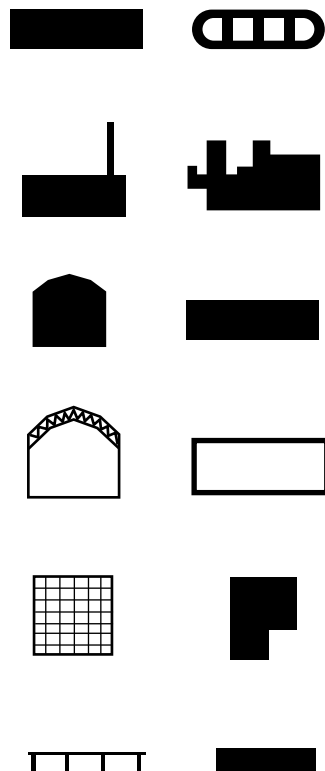
In studying the typology of the factory, we looked at various precedents that exemplify industrialized architecture, rather than allowing the program to be inserted into an undefined mono-space. The examples we chose approached the design through innovations in structure, integrating program into the built form, and highlighting the advances in technology of the time period. We studied multiple eras to see how the architecture of those times affected industrial architecture and vice versa.

The precedents studied are all located in Europe, where the industrial typology was more evolved than in the US. The typical architecture of the industrial era in the United States is primarily large scale factories, which in many cases have now been abandoned. Most factories have exposed steel structure, a primary open floor plan with secondary spaces on the borders to accommodate for large scale manufacturing and storage. Materiality wise, they vary between brick, concrete, and steel. The form acts as simply a container for industry, lacking aesthetic integrity. The grain silo is a symbol of industry in America, doubling down on the infatuation of the container.

Because our intervention will affect multiple sites, we will need to study each one individually as well as how they interact as a whole. We will contextually study all three sites at a large scale, diagrammatically designing in the rural and suburban zones (cannabis and marijuana production sites). This will be at the scale of 1:50,000. The urban site along the Mississippi River will be fully designed to the scale of the detail. The former freight depot will be the hub for the subsequent industries that cannabis will produce and connect them

to a larger system along the Mississippi River and the Midwest as a whole.

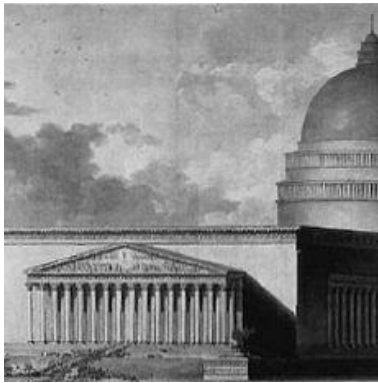
Defining the architecture of the neo-industrial requires answering key questions. These include: What purpose will it need to serve? What program it will house? How will it interact with the context? How can it act as an apparatus for revitalization? Does it preserve or disregard? How does the heritage of the site impact formal moves? What will be its role in the future? How can it more successfully age with the city? How can the existing building be integrated into a larger complex and re-suited to accommodate not only a new industry but also the new cutting edge technology of the current time? By drawing inspiration from our precedents we will be able to answer these questions.



PROJECT	LOCATION
Fiat Factory	Turin, Italy
Fagus Factory	Lower Saxony, Germany
AEG Turbine Factory	Berlin, Germany
Galerie of Machines	Paris, France
Maison de Verre	Paris, France
Crown Hall	Chicago, IL

ORIGINAL USE	CURRENT USE	SUMMARY	WHAT WE'RE USING
Fiat Car Factory	Mixed-Use	Synthesize & Preserve	Existing Formal Organization
Shoe Factory	Shoe Factory	--	--
Turbine Factory	--	--	Structure Influencing form
Pavilion for the Exposition Universelle	Demolished	Visible Structure	Visible Structure
Mixed-Use	Museum	Industry Aesthetic Domestic Setting	Mixing Aesthetics
IIT's College of Architecture	IIT's College of Architecture	Structure as Ornament	Visible Structure

Figure 51. Precedent Matrix



Greek to Roman : The translation of the pediment at various scales

Figure 52. Temple of Hera Paestum (460 BC)

Figure 53. Maison Carrée (12 BC)

Roman to Romanesque : The translation of the rounded arch from structure to ornament

Figure 54. Basilica of Maxentius and Constantine (312 AD)

Figure 55. Church of St Trophime (12th C)

Roman to Renaissance : The translation of the pediment at various scales. The pediment is now at the size of window ornamentation

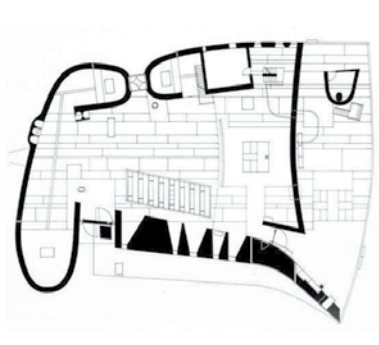
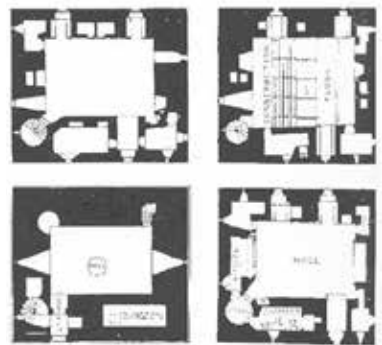
Figure 56. Maison Carrée

Figure 57. Laurentian Library (1571)

Roman to Neoclassicism : The translation of monumentality and the use of the pediment as ornament rather than function

Figure 58. Maison Carrée

Figure 59. Metropolitan Cathedral, Etienne-Louis Boullée, 1770s



Renaissance to Classical Revival: Using geometries, symmetry, and ornamentation to give the impression of grandeur.

Figure 60. Dome Tempietto (1500)

Figure 61. US Capitol Building (1800)

Gothic to Gothic Revival: Using ornament without the need for structure

Figure 62. Duomo di Milano (1296)

Figure 63. Parliament Building (1876)

Gothic to Modernism: Structure is visible and becomes part of the ornament

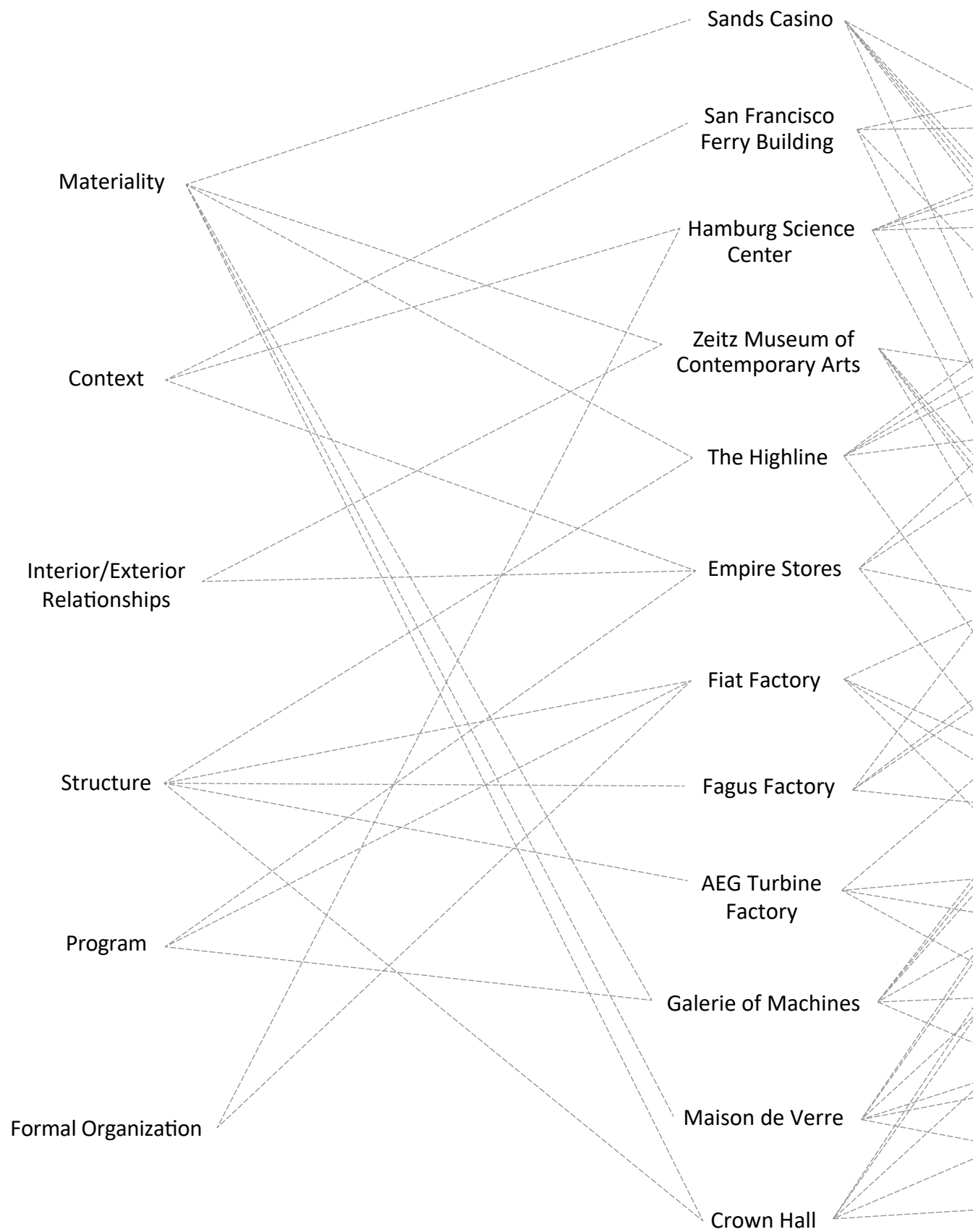
Figure 64. Notre Dame (1163)

Figure 65. Seagram Building (1953)

Medieval to Modernism: Carving into walls to create rooms and deep set windows, no longer a structural need but now an aesthetic

Figure 66. Medieval Castle sketches by Kahn

Figure 67. Notre Dame du Haut/Ronchamp, Le Corbusier (1955)





Criteria of Evaluation

Contextualization of Subject Matter

The recognition of the relationship between the present and past conditions is the basis of the thesis project as it seeks to situate itself within the existing. The identification of connections and relationships between dichotomies that exist in researched material should be reflected throughout the thesis. Creating a connection between the various components of our thesis including the Mississippi River, the industrial, post-industrial, neo-industrial, the center vs. the edge, revitalizing post-industrial sites, and the cannabis industry.

Explicitly Defined

The definitions of topics should act as a driver for the research process but should not be the only parameters set. Further examination beyond the semantic value of terms should provide extensive understanding of vocabulary used within discussions related to the thesis. In cases where specific terms are being explored in ways apart from the normative definition, explicit definitions should be provided so as to allow for common understanding between students and instructors.

Interdisciplinary Integration

Work produced within the course of the thesis preparation is to explore and utilize information and precedents from many different disciplines outside the traditional realm of architecture. The sourcing and integration of interdisciplinary thoughts and narratives will lend itself to creating a deeper pool of knowledge for the thesis project to be based on and further situate the project within the existing discourse.

Distribution of Research, Produced Work and Presentation

Both members are responsible for an equal amount of work produced. The large volume of work expected at the end of production is to be evenly delegated and it is expected that all work will be completed to a predetermined level of skill and resolve. Adherence to all agreed upon deadlines is required. Likewise, both members are responsible for communicating with one another, and when necessary with the advisors in a timely manner to allow for production of thesis work to continue on schedule.

Connectivity Between and to Existing Areas of Architectural Discourse

The trajectory of the project should lend itself to possible continuation and development beyond the deadlines of the thesis schedule. Contentions made within the thesis should provoke further academic thoughts and generate a dialogue. Thesis projects do not necessitate the solving of a problem but must present a sound trail of logic in exploring concept and relating it in depth to the existing material within the architectural scope.

Clarity

The scope of subject area for research should be narrow but deep. A specific area of focus should be chosen and investigated with rigor. A high level of coherence between subject, research, intentions and relationships should be apparent in all produced work. Each product or series of products should have the ability to be understood individually, as well as work within the overarching scope of the project.

Graphic Consistency

Cohesion between all modes of presentation, is necessary for productive discussion and comparison of content towards a greater understanding of the topic of study. Products within a singular thesis project should conform to a familial graphic method of representation and presentation.

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